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NOTES
FROM THE
LEYDEN MUSEUM.

NOTES

FROM THE

LEYDEN MUSEUM

FOUNDED BY THE LATE

Prof. H. SCHLEGEL,

CONTINUED BY

Dr. F. A. JENTINK,

Director of the Museum.

VOL. XII.

LEYDEN

E. J. BRILL.

1890.

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NOTE I.

DESCRIPTIONS OF TWO NEW PAUSSIDAE FROM THE
MALAY-ISLANDS.

BY

J. R. H. NEERVOORT van de POLL.

Merismoderus hamaticornis, v. d. Poll.

Subopacus, rufo-testaceus, maxime parte antennarum clavae nigricante, elytris rufo-pilosis, in medio fascia perlata angulari nigra notatis, sutura a fascia usque ad apicem nigrolimbata. Caput breve, latum, antice planum, margine postica sat elevata; antennarum clava elongata, quasi 5-articulata, articulo primo intus in spinulum curvatum producto, articulo ultimo praecedentibus duplo longiore. Prothorax antice capite multo angustior, postice latitudine fere aequalis, bipartitus, parte antica magis elevata, in medio impressa, late bi-lobata, parte postica quasi 4-lobata. Elytra humeris late rotundatis, lateribus fere rectis, juxta apicem paullisper rotundato-dilatatis, apice truncato. Pygidium costam arcuatam utrinque ampliatam et leviter impressam exhibens. Pedes graciles; tarsorum intermediorum et posticorum articulo basali tribus sequentibus fere aequali, articulis 2—4 magnitudine diminuentibus, articulo ultimo perlongo; anticorum articulis 1—4 gradatim diminuentibus.

A *M. Bensoni* Westw. valde distinctus, colore diverso, clava graciliore spinula armata, capite multo latiore et brevior.

Long. $4\frac{1}{2}$ mm.

Habitat: Sumatra (C. Bock!).

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Rather dull, pale rufous, the antennary club almost entirely blackish except at the base, the elytra ornated with a very large black band, its upper margin obliquely directed towards the suture, the lower margin, which is less oblique, united with the apex by a narrow black border along the suture.

Head very short and broad, strongly rounded behind the eyes, the front part rather strongly depressed and the vertex much inflated near the hind margin. The antennary club slender, apparently composed of five joints, being divided by four deep transverse impressions; the basal pseudo-joint shorter and broader, prolonged at the inner-side into a subtile spine, curved at the tip and obliquely directed towards the head; joint 2—4 about of equal size, the apical joint large, as long as two of the foregoing together, broadly rounded at the tip. Prothorax bipartite, the front part much narrower than the head, very deeply impressed in the middle, forming two large elevated arcuate lobes; the basal part as wide as the head, on a much lower level than the former part, with a deep impression in the middle and a somewhat shallower one on each side, somewhat four-lobed. Elytra entirely and rather densely covered with long fulvous hairs; the shoulders broadly rounded, the sides almost straight, slightly swelling out just before reaching the apex, which is largely truncated. The pygidium is provided with a strong, arcuate ridge, parallel to the outer margin, gradually enlarged towards both ends and slightly impressed. The legs slender; the fœdertarsi with joint 1—4 small, gradually decreasing, the last joint very long; the intermediate and posterior tarsi with the basal joint large nearly as long as the three next following together, these gradually decreasing, the ultimate joint very slender.

The genus *Merismoderus* being composed of a single species only, viz. *M. Bensoni* Westw. from continental India, which is of extreme rarity in collections, the discovery of a second species from Sumatra must be consi-

dered of high interest. Although my new species is doubtless congeneric with *M. Bensoni* Westw., still there are great differences between both; besides the coloration, the most striking characters of *hamaticornis* are, the little hook into which the lower inner edge of the club is prolonged and the short and strongly transverse head. A unique specimen has been forwarded (together with a specimen of the hardly known *Lebioderus Percheronii* Westw.) to Mr. E. W. Janson by Mr. Carl Bock, who took them in Sumatra but unfortunately did not mention a more peculiar locality.

Platyrhopalus macrophyllus, v. d. Poll.

Nitidus, piceus. Clava antennarum magna, lata, multo depressa, apice angulata, margine postica in dentes duos pervalidos producta et ante basin nonnihil obtuse lobata. Lateraliter prothoracis antice subangulata, valde obtusata.

Pl. vexillifero Westw., multo affinis sed clava valde depressa haud inflata, cuius dentes postici validiores et magis trianguliformes, denticulusque subbasalis haud acutus sed valde obtusatus, et prothorace antice subangulato haud gradatim rotundato apicem versus, discrepat.

Long. $7\frac{1}{2}$ mm.

Habitat: Temanggoeng, Central Java.

Very much like *Platyrhopalus vexillifer* Westw., of which the unique type specimen of Mr. E. W. Janson's collection, is now in my possession. Somewhat more robust in all its proportions, almost of the same piceous colour, but the antennary club, elytral margins, undersurface and legs slightly darker. The antennary club affords the best characters to separate both species, being larger and depressed instead of inflated, and differing also in outline, the apex more triangular, the two enormous teeth formed by the hinder margin much stouter at the base and of course more triangular-shaped, on the contrary the small tooth near the base hardly indicated by a broadly rounded pro-

jection. Moreover the angles behind the eyes are less projecting in our new species and the thorax is less convex and more angular in front, i. e. not so gradually rounded and narrowed towards the top as in *P. vexillifer*. *P. macrophyllus* is also close to *P. aplustrifer* Westw. and as regards the more depressed antennal club even nearer to that species, however, *aplustrifer* is considerably smaller, of a more brownish colour and its club is blunt at the top and dentiform enlarged before the base.

Raffray's Group I¹⁾ of the genus *Platyrhopalus*, now consists of three species, which have the following geographical range, viz.: *Pl. aplustrifer* Westw. from continental India (I have only one specimen with a more precise locality »Bombay", Westwood and Raffray record »Bengal"); *Pl. vexillifer* Westw. from Penang and probably to be detected also in Sumatra and Borneo; *Pl. macrophyllus* v. d. Poll from Java and very likely peculiar to that island.

1) I am not aware for what reasons Raffray, in his general Catalogue of the Paussidae, enumerates the three groups of *Platyrhopalus*, formerly established by himself, in this order: 3. 1. 2., which is fairly in contradiction with his opinion that »le premier groupe fait le passage avec les *Lebioderus*, qui précèdent, et ce dernier avec les *Paussus*, qui suivent."

NOTE II.

ON NEW OR LITTLE-KNOWN BATOCERIDAE.

BY

J. R. H. NEERVOORT van de POLL.

Batocera inconspicua, v. d. Poll.

♂. *Nigra, omnino tomento fulvo tecta, subtus lateraliter ab oculis usque ad medium primi segmenti abdominis vitta lata alba ornata. Caput subtilissime densissimeque punctatum, in fronte aliquot punctis grossis intermixtis. Antennarum scapus sat elongatus, rugoso-punctatus, cicatrice fere haud conspicua; illarum articuli 3—10 prorsus spinis minutis obtecti et ad apices spinis plurimis validioribus armati. Prothorax in disco inaequalis, in medio utrinque longe et recte spinosus; delicatissime punctatus. Elytra elongata, subcuneiformia; humeris valde prominentibus, dente valido, perlongo et oblique posito, armatis; ad apicem recte truncata, quadrispinosa (spinae suturales majores); sparse punctata, quarta parte basali granulis sat dense oblecta. Tibiae anticae post medium arcuatae, intus denticulatae; primus articulus tarsorum extus in dentem brevem pervalidum productus.*

Long. 52 mm., lat. ad hum. 17 mm., long. antennarum 98 mm.

Habitat: Dinner Island, S. E. New Guinea (H. O. Forbes!).

Black, entirely clothed with a fulvous tomentum, the sides of the undersurface with a broad chalky white stripe, which originates at the eyes and stops about the middle of the first abdominal segment. Head extremely minutely

punctured, in front with a few scattered larger punctures and a sharply elevated line in the middle, with a small pit behind the antennary tubers and a few small flattened granules along the upper lobes of the eyes. The scape of the antennae is rather slender, hardly angular and broadly rounded at the top, its cicatrix not very distinct, rugosely punctured. The 3rd antennal joint overreaching the next following with one third of its length, the 4th—10th gradually but slightly decreasing, the apical joint at least one fourth longer than the foregoing; the 3rd—10th joints covered roundabout with minute flattened spines, which are larger and more porrect along the underside, however these spines are absent on the uppersurface of the entire third joint and the basal half of the fourth, where they are replaced by a sculpture consisting of small punctures intermixed with numerous large ones; moreover the apices, except above, are armed with short stout spines. Prothorax constricted and wrinkled anteriorly and posteriorly, disc uneven but without strong unequalities, sides provided with long spines, which are straight, acute and slightly turned upwards, below them there are a few small granules. Scutellum large, broadly rounded. Elytra elongate and cuneiform with the shoulders very prominent and provided with an obliquely directed strong tooth; their apices cut off in a straight line, four-spined, the lateral spines short, the sutural ones longer and sharper; the basal fourth thickly covered with granules of moderate size, which are rather smaller and extend more downwards along the sides, all the remainder covered with scattered shallow punctures, which become the more and more obsolete towards the top. The forder tibiae are strongly arcuate beyond the middle and the inner margin is irregularly denticulate; the first joint of the forder tarsi is armed on the outerside with a very short but strong spine.

In several respects this species comes very close to *B. armata* Ol., but inter alia, the last antennal joint not being spatula-shaped, the presence of lateral spines at the apex

of the elytra and the more strongly arcuate forder tibiae, will be sufficient to separate both species without much difficulty.

Batocera laena Thoms.

The unspotted variety *Sappho* Thoms. of this species, has been considered peculiar to Northern Australia, being hitherto recorded from that locality only; however, I recently got a ♀ specimen from the Kei-Islands.

Batocera Woodlarkiana Montr.

Not having seen this species when writing my list of the *Batocera*'s, and judging from the insufficient description, I expressed my opinion that it might prove to be referable to the variety *Proserpina* Thoms., of *B. Wallacei* Thoms., but since several specimens having come under my notice, I may state that it is a perfectly distinct species. I think it will be best located near *B. laena* Thoms., but may be easily distinguished from that species by the following particularities, viz.: the elytral spots are larger, much more numerous and irregular; below the granules the elytra are but shallowly and distantly punctured and there are no lateral spines; moreover in the male sex the antennary scape and the 3rd joint are not so rough and the first joint of the forder tarsi has no dentiform prolongation. *B. Woodlarkiana* Montr. is not confined to the Island of Woodlark, but occurs also in the Island of New-Ireland and of course probably in many of the adjacent islands.

Batocera nebulosa Bates.

Hitherto only recorded from Duke of York Isl. and the Fidgi Isl. (the latter locality I consider somewhat doubtful, and may likely prove to be a »dealer's locality"), also occurs at New-Guinea, I just got a specimen from Emperor William's Land (German New-Guinea).

NOTE III.

ON A NEW LONGICORN FROM MADAGASCAR.

BY

J. R. H. NEERVOORT van de POLL.

Artelida pernobilis, v. d. Poll.

Length 15 mm., breadth at the shoulders $4\frac{1}{2}$ mm. — Exceedingly close to *A. aurosericea* C. O. Waterh., with the type specimen of which I had an opportunity to compare my species at the British Museum. The covering pile of the uppersurface of a much brighter and more orange golden tinge; the underside fuscous-black instead of yellowish; the antennae entirely fulvous whilst they are fuscous with the first joint clearer in *aurosericea*. The head with much more prominent eyes. The thorax anteriorly necklike prolonged, with a distinct spiniform tubercle at the sides and four obtuse tubercles on the disc; *aurosericea* has the thorax wider at the base and the lateral tubercles less developed. The hinder tibiae are less dilated in our new species and they do not present any difference according to the sexes; the claw-joint is dilated in the male sex.

A. crinipes Thoms. ¹⁾ is also nearly allied, the shape of the head and thorax is almost exactly the same, but the colour is brownish and the covering pile thinner, even not hiding the elytral sculpture; below the abdomen only is blackish and the hinder tibiae are very strongly dilated and thickly clothed with long black hairs.

A. pernobilis has been taken by Mr. E. Perrot at Fenerive on the east coast of Madagascar.

1) I think it must be ascribed to a lapsus calami, that Mr. Waterhouse calls this species "*crinita* Thoms."

NOTE IV.

ON THE SPECIFIC DISTINCTNESS OF
RHOMBORRHINA RESPLENDENS SWARTZ AND
GIGANTEA KRAATZ.

BY

C. RITSEMA Cz.

In the introduction of his »Uebersicht der Cetoniden der Sunda-Inseln und Molukken" (Troschel's Archiv für Naturgeschichte. 1871. I. p. 224) Dr. Mohnike puts in question the correctness of the statement about the habitat of three *Rhomborrhina*-specimens (two from Java: Muller, and one from Sumatra: Ludeking) at that time present in the collection of the Leyden Museum, and says to be convinced of the absence of representatives of the above genus from all the Asiatic Archipelagos with the only exception of Japan. As to the habitat »Sumatra" the late Dr. Snellen van Vollenhoven has already recorded (Tijdschrift voor Entomologie. XV. 1872. p. 125) that this was not at all doubtful, having, as he said, taken himself the specimen out of Ludeking's box and placed it in the collection. Afterwards I myself could ascertain the same about the habitat »Java" having received a specimen captured by Mr. Bernelot Moens in the Preanger Districts at a height of 4 à 5000 feet above the level of the sea (Tijdschr. v. Entom. XXIII. 1880. p. xciv). Thus the presence of the genus *Rhomborrhina* in both these islands was sufficiently stated, the identification of the species, however, was erroneous. Snellen van Vollenhoven (l. c. p.

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127) pertained in regarding the specimens above referred to as belonging to *resplendens* Sw., notwithstanding Mohnike (l. c.) had already expressed some doubts as to the correctness of this identification; I myself at first (l. c.) adopted Snellen van Vollenhoven's determination, but after having received a specimen of the true *resplendens*, I considered the Javan and Sumatran specimens as belonging to *heros* G. & P. (see Tijdschr. v. Entom. XXVI. 1883. p. cxlii), an identification which I now feel sure is likewise incorrect.

On page 380 of vol. XXVII (1883) of the Deutsche Entomologische Zeitschrift Dr. Kraatz describes a species of *Rhomborrhina* under the name of *gigantea* without making mention of its habitat. This species is considered by Mr. Neervoort van de Poll (Notes Leyden Museum. 1889. p. 64) to be a mere synonym of *resplendens* Sw., an assertion which is, and with reason, disapproved by Dr. Kraatz (Deuts. Entom. Zeits. 1889. p. 421) who mentions at the same time the island of Nias as the probable habitat of his species¹⁾. Moreover Dr. Kraatz maintains Dr. Burmeister's view concerning the identity of *resplendens* Sw. and *heros* G. & P., and after a careful reexamination of the matter I fully agree with him, and have come to the conclusion that Kraatz's *Rhomborrhina gigantea* is a distinct species which occurs in Nias, West Sumatra and West Java, specimens from these three islands being present in the Leyden Museum. The specimens from Java, however, are of a more golden green colour with a more or less distinct orange yellow hue on the disc of the elytra according to the light.

In reexamining my specimens of these two species I found, besides the difference in size, shape and coloration, that in *resplendens* the front margin of the clypeus is considerably more turned upwards and that the lateral declivous portions of the clypeus are much broader than in *gigantea*;

1) It is, but no doubt by mistake, recorded by von Schönfeldt in his Catalogue of the Coleoptera of Japan (Jahrb. Nass. Ver. f. Naturk. XL. p. 110).

that the part of the head between the eyes is more distinctly raised along the middle in *resplendens* than in *gigantea*; that in *resplendens* the central emargination of the basal margin of the thorax (in front of the scutellum) is smaller than the lateral ones, whereas they are equal in width to each other in *gigantea*, and finally that in *resplendens* the scutellum is distinctly smaller than in *gigantea*.

Obs. The Javan Cetoniid for which Dr. Kraatz proposes (Dents. Entom. Zeits. 1889. p. 422) the name of *Macronota rufipennis*, no doubt will prove to be one of the varieties of *Macronota scenica* G. & P. which certainly is specifically distinct from *Macronota quadrilineata* G. & P.

A few years ago Dr. Kraatz published (Deuts. Entom. Zeits. 1885. p. 80) some remarks about *Glycyphana rufo-vittata* Guérin and Wallace, and supposing that Wallace's specimens did not belong to the true *rufo-vittata* Guér., he proposed for the former species the name of *vittata*. However, four years previous to that date Mr. O. E. Janson had already changed the name *rufo-vittata* Wall. in *illusa* (Cist. Entom. II. p. 608. Febr. 1881), giving at the same time a detailed description of the species, and mentioning 11 mill. as its length. Kraatz is wrong when he says: »Dieser (Wallace) giebt seiner Art 14 mill. Länge'', as nothing is said by Wallace about the size of his specimens.

In our Museum is a specimen (from Malacca) of the true *rufovittata*, which exactly corresponds to Guérin's description (Rev. Zool. 1840. p. 82) with the exception, however, of the colour of the elytra these being dull black in stead of shining dark green. As to the dirty white crust which, in my specimen, covers the entire pygidium and sides of abdomen, this no doubt is a character of the female, and consequently Guérin's specimen must be a male.

NOTE V.
A NEW AFRICAN MYODITES-SPECIES.

DESCRIBED BY

C. RITSEMA Cz.

Myodites Büttikoferi, n. sp.

Length 5 mm. — Black; the plumose antennae, the anterior femora, and the tarsi (the large basal joint excepted) pale ochreous, the middle portion of the mandibles, the apical half of the anterior tibiae, and the middle portion of the intermediate femora somewhat darker; the tip of the flabellae of the antennae infusate; an indistinct brownish subtransparent spot on the basal half of the inner margin of the elytra; wings hyaline with a transverse dusky band just before the apex; the costal nervures alternately pale ochreous and dusky.

Head and thorax opaque in consequence of a very dense punctuation, covered with a short grayish pubescence; the vertex elevated, obtusely conical; the pronotum with three small smooth spots forming an isosceles triangle which has its top directed towards the head; the scutellum glossy, impunctate but with a central fovea; the elytra strongly punctured, subshining, the shoulders glossy and impunctate; the abdomen densely punctured, the margins of the segments glossy and impunctate; the legs strongly punctured, the anterior and intermediate ones subshining, the posterior ones opaque; the middle tarsi the longest of all, the basal joint of the hind ones nearly as long as the following joints taken together.

Hab. Grand Cape Mount: Liberia (West Africa). — A single specimen captured by Mr. A. T. Demery, a young Liberian Mulatto, who spent about a year in Leyden with Mr. Büttikofer. Enabled by the latter to continue his zoological researches in Western Africa, Mr. Demery a few weeks ago sent his first consignment, in which the above described specimen was contained.

NOTE VI.

BEITRAG ZUR KENNTNISS DER HISTERIDEN.

VON

Joh. SCHMIDT.

Herr C. Ritsema hatte die Freundlichkeit, mir auf meinen Wunsch ein typisches Stück des *Platysoma Hageni* Mars. aus Ost-Sumatra (Notes Leyd. Mus. 1884. p. 161) zur Ansicht mitzuthemen, durch welches die von mir schon längst gehegte Vermuthung der Identität dieser Art mit *quinquestriatum* Motsch. volle Bestätigung fand. Die von Motschulsky erwähnte buchtige Querlinie auf dem Propygidium, welche die Punktirung desselben nach vorn begrenzt, ist bei dem vorliegenden Exemplar des *Hageni* sehr deutlich. Nach G. Lewis (Ann. Mus. Civ. Genova. 1888. p. 635), dessen Ansicht ich vollkommen theile, ist *5-striatum* Motsch. = *Confucii* Mars. also auch *Hageni* identisch mit dieser älteren Art de Marseul's. Dass *quinquestriatum* nicht, wie G. Lewis früher glaubte (Ann. a. Mag. N. H. 5th ser. vol. XV. 1885. p. 461), mit *restoratum* Walker (*Dohrni* Mars.) zusammenfallen kann, habe ich bereits (Entom. Nachricht. 1889. p. 333) nachgewiesen. Als Unterschied von *Confucii* und *Hageni* scheint sich aus den Beschreibungen zu ergeben, dass bei letzterem die hinteren Schienen vierzählig sind. Es sind aber wohl nur die mittleren Schienen gemeint, an denen man allerdings, den doppelten Spitzenzahn als zwei gerechnet, vier Zähnchen zählen kann, die Hinterschienen haben bei dem vorliegenden Exemplar über diesem Spitzenzahn, genau wie bei *Confucii*, nur ein Zähnchen. Das Pygidium des *Hageni* soll »*finement chagriné*»

sein, ich finde aber nach Reinigung des etwas verklebten typischen Stückes keine Spur einer derartigen Sculptur, das Pygidium besitzt mit Ausnahme der starken Punkte an der Basis nur eine ziemlich weitläufige, mikroskopische Punktirung und erscheint stark glänzend. Dagegen ist die Oberseite, namentlich der Vorderrand des Halsschildes, etwas matt, was aber sicherlich nur Folge von Alter ist, von dem die zahlreich vorhandenen feinen Risse oder Schrammen zeugen. Möglich, dass bei dem zweiten Stück, welches mir nicht vorgelegen hat da es sich in der Sammlung des Herrn de Marseul befindet, auch das Pygidium in ähnlicher Weise stumpf glänzend geworden ist. Die grobe Punktirung an der Basis dieses Segments variirt bei Exemplaren von derselben Lokalität in der Ausdehnung, sie reicht in manchen Fällen fast bis zur Mitte. Die Art ist von Ceylon bis China verbreitet (Andamanen, Birma), ich besitze auch ein Stück von den Philippinen (Semper).

Platysoma Sundae Schmidt. — Von dieser Species, welche ich (Entom. Nachricht. 1889. p. 332) nach einem Exemplar von Borneo beschrieb, erhielt das Leydener Museum ein Stück aus West-Sumatra (Padang Sidempoean, Resid. Tapanoeli: J. D. Pasteur). Bei demselben ist die Oberseite sehr dicht und fein, die Seiten des Halsschildes kräftiger punktulirt. Auch das typische Exemplar besitzt eine ähnliche, aber viel feinere und weitläufigere Punktulirung, welche an den Seiten des Halsschildes ebenfalls deutlicher ist. Im Uebrigen stimmen beide Stücke vollständig überein und gehören sicher zusammen. Eine ähnliche Punktirung findet sich (siehe Entom. Nachricht. 1889. p. 362) bei vielen Histeriden, wie es scheint namentlich bei recht frischen Exemplaren; dass auch das vorliegende ein solches ist, beweist schon das nicht völlig ausgefärbte, bräunliche Halsschild.

NOTE VII.

DESCRIPTION D'UN NITIDULIDE NOUVEAU
DE SUMATRA.

PAR

A. GROUVELLE.*Pseudoplatychora*, nov. gen.

Corpus lato ovatum, convexiusculum. Caput ante oculos haud lobatum. Labrum latum, bilobum. Mandibulae apice bicuspi. Mentum latum, maxillas partim obtegens. Sulci antennarii recti, convergentes. Prothorax basi marginatus. Elytra apice rotundata. Mesosternum carinatum. Tarsi simplices.

L'insecte décrit dans cette note présente une physionomie si particulière qu'il nous a paru inadmissible de le rapporter aux genres déjà publiés. Bien que très-voisin des *Platychora* il s'en sépare par ses élytres arrondies au sommet, son mésosternum caréné et son prothorax rebordé à la base.

Pseudoplatychora convexiuscula, nov. spec.

Ovata, subnitida, picea, rugosula, parce pubescens, setosa; prothorace transverso, antice posticeque angustato, margine antico profunde emarginato, angulis posticis rectis; elytris ovatis, ad apicem acuminatis, basin versus prothorace latioribus, angulis humeralibus rectis. — Long. 4 à 6 mill.

Ovale, couleur de poix assez brillant, rugueux, couvert d'une pubescence couchée très clair-semée, entremêlée de soies raides rangées en lignes sur les élytres.

Tête triangulaire, plus large que longue, marge antérieure arrondie. Prothorax environ deux fois plus large

que long, rétréci en avant et en arrière, présentant sa plus grande largeur vers le $\frac{1}{3}$ à partir de la base. Angles antérieurs saillants en avant, angles postérieurs droits. Marge postérieure bisinuée, rebordée. Disque du prothorax un peu relevé devant le milieu de la marge basilaire. Ecusson petit, transversal, non ponctué. Elytres ovales, plus larges à la base que le prothorax, présentant leur plus grande largeur vers le $\frac{1}{4}$ basilaire, couvrant presque complètement l'abdomen, angles huméraux droits, marges latérales redressées, très largement et très obtusément crénelées dans la partie basilaire. Pattes allongées.

Hab. Sumatra occid.: Padang Sidempoean, résid. Tapanoeli (J. D. Pasteur). — Quatre exemplaires de la collection du Musée de Leyde.

NOTE VIII.

ON A COLLECTION OF SNAKES FROM DEHLI.

BY

Dr. Th. W. van LIDTH de JEUDE.

(Plate 1).

During his stay in Laboean (Dehli, East-Sumatra) Dr. B. Hagen, to whom the Leyden Museum is indebted for large series of mammals, birds and insects, also collected a large number of snakes, the greater part of which were sent to our Museum. Dr. Hagen took a lively interest in snakes, and being convinced of the benefit a colonist might derive from the knowledge of the venomous snakes, living in his neighbourhood, he gave some years ago a description of those dangerous animals and their habits in the »Dehli-Courant''. As some of his statements were unknown to me and may perhaps be generally unknown, I shall take the liberty to mention these facts in this note, a newspaper as the Dehli-Courant being not likely to be consulted in matters of herpetology.

Afterwards the Leyden Museum was presented with a collection of snakes from Dehli by Mr. J. Chr. Prakke, who collected them in the neighbourhood of his plantation at Langkat.

The snakes of Dehli are now represented in the Leyden Museum by 43 species, and though only one species and one variety have till now been left undescribed, I thought it worth while to give a full list of the species represented in our Museum, as the occurrence of some of them as *Psammodynastes pictus* Gthr. and *Dryophis fasciolatus* Fi-

schcr indicate a relationship between the Fauna of Dehli and that of Borneo.

1. *Typhlina lineatus* Reinw.

One specimen from Laboean and another from Langkat.

2. *Cylindrophis rufa* Laur.

A great many specimens both from Laboean and from Langkat.

3. *Xenopeltis unicolor* Reinw.

Many specimens from both localities.

4. *Python reticulatus* Schneid.

Two specimens in Dr. Hagen's collection and one from Langkat.

5. *Calamaria vermiformis* D. & B., var. *sumatranus* mihi.

Two specimens of *Calamaria* in the collection of Dr. Hagen agree as to the pholidosis in all points with the description of *Calamaria vermiformis* given by Duméril and Bibron, but differ from it as to the coloration.

Both specimens have 5 upper-labials, the first pair of the lower ones do not form a suture but touch the chin-shield, whilst an azygos shield lies between the four chin-shields.

There is one foursided praecocular, the upper side of which has twice the length of the lower one. The scales are arranged in 13 rows; one specimen has 170 ventrals, one undivided anal and 19 pairs of caudals, the other has 165 ventrals, one undivided anal and 22 pairs of caudals.

As to the coloration both specimens differ from *Calamaria vermiformis* in having the upper parts brown with a bluish shine from the lips till the end of the tail, without any yellowish band or any spots. The four anterior upper-labials are brown also, only the 5th having a yellowish colour.

The lower part of the head and the 6 to 8 anterior ventrals are yellow.

The two outer rows of scales are for the greater part yellow, thus forming a yellow line which begins at the third series of scales and runs till the extremity of the tail. The belly from the 6th or 8th ventral is of a dusky-brown colour, with irregular yellowish spots. These spots never touch the yellow line, which runs along the sides of the belly, but are always surrounded by the dusky-brown colour.

In the largest of the two specimens these yellow spots are very small and few in number behind the middle of the body and on the tail.

As I have no specimens of *C. vermiformis* for comparison, I could only compare my specimens with the description given by Duméril and Bibron in their »Histoire des Reptiles" and with Jan's figures in his »Iconographie générale des Ophidiens", livraison 10, planche 2, fig 3. As these figures were made from a specimen in the Museum at Paris (probably one of the typical specimens), I think the difference in coloration between my specimens from Dehli and the type considerable enough to believe my specimens to belong to a peculiar variety.

6. *Simotes octolineatus* Schneid.

Several specimens from Laboean.

7. *Diadophis baliodeirus* Boie.

Three specimens in Dr. Hagen's collection.

8. *Elaphis melanurus* Schl.

A great many specimens were found in both collections.

9. *Coryphodon korros* Reinw.

According to Dr. Hagen this species is very common at Dehli. We got only one specimen from Laboean.

10. *Tropidonotus trianguligerus* Schl.

Four specimens in Dr. Hagen's collection.

11. *Amphiesma rhodomelas* Schl.

Two specimens from Laboean.

12. *Amphiesma chrysargos* Boie.

One specimen in Dr. Hagen's collection.

13. *Amphiesma flaviceps* D. & B.

Five specimens from Laboean and Langkat have all one praeocular and three postoculars, except one specimen with four postoculars, and eight upper labials. The reddish band behind the black ring round the neck occupies in one specimen six rows of scales, in two others only five, and in the last two specimens it is as broad as four rows. Especially the colour of the head is darker than in Jan's figure ¹⁾, and the white cross-bands along the sides of the tail are clearly visible.

14. *Homalopsis buccatus* L.

Three specimens from Laboean, two from Langkat.

15. *Homalopsis boaeformis* Schneid.

One specimen in Dr. Hagen's collection.

16. *Hypsirhina plumbea* Boie.

One specimen in Dr. Hagen's collection.

17. *Hypsirhina Hageni*, nov. spec.

Head rather long, scarcely distinct from neck; body and tail short and stout. Scales polished, in 27 rows, those on the middle of the back hexagonal, more long than broad, those on the flanks lozenge-shaped, equally broad and long

1) Jan, Iconographie générale des Ophidiens, livraison 29, pl. 3, fig. 1.

or broader. Our single specimen has 141 ventrals, a divided anal and 28 pairs of caudals.

Anterior frontals very small, smaller than one of the postoculars, vertical elongate, supraciliaries nearly as long as the vertical. Two postoculars, one praeocular very high, reaching the vertical with its upper angle. Loreal large, bordered by the praeocular, the posterior frontal and four or five upper-labials. Nasal pentagonal, with the nasal opening nearly in the middle and a groove running from the neighbourhood of that opening towards the side bordered by the first upper-labial.

Upper-labials high, the first four or five undivided, the hinder ones divided into two or three by transverse sutures. There is a longitudinal groove between the upper labials and the shields above them. Along the cleft of the mouth there are nine upper-labials on the right side, and ten on the left. Twelve lower-labials are present on each side, the anterior two of each side meeting those of the other side behind the mental, the posterior ones are divided into two shields by a longitudinal groove. Three pairs of chin-shields, the anterior very large and broad, resembling those of *Hypsirhina Bocourti* Jan ¹). The following pair small, the last pair nearly resembling ordinary scales. The lower pairs of chin-shields do not reach one another but are separated by seven scales.

Upper parts blackish brown with narrow stripes of a yellow colour ascending along the sides and reaching the middle of the back, mostly not joining those of the other side but alternatively arranged. Posterior upper-labials yellow. The three outer series of scales yellow with some small dark spots detached from the dark upper parts; belly and under part of the head yellow, except the mental and the six anterior labials which are brownish, under part of the tail yellow with the margins of the subcaudals dark, these dark margins forming a zig-zag line along the middle of the tail.

1) Jan, l. c., livraison 26, pl. 5, fig. 2.

The single specimen of this species which I dedicate to Dr. B. Hagen, shows asymmetry in the arrangement of the upper- and lower-labials. It was caught at Laboean.

18. *Liopeltis tricolor* Schl.

One specimen in Dr. Hagen's collection.

19. *Gonyosoma oxycephalum* Reinw.

Four specimens in Dr. Hagen's, one in Mr. Prakke's collection.

20. *Leptophis formosus* Schl.

One specimen in Dr. Hagen's collection, without any black stripes along the sides. The black band from the tip of the snout through and behind the eye runs on to on the body.

21. *Dendrophis pictus* Boie.

Many specimens in both collections.

22. *Dendrophis octolineatus* D. & B.

Two specimens from Laboean, one from Langkat.

23. *Chrysopelea ornata* Shaw.

One specimen in Dr. Hagen's collection belonging to var. γ Günther¹⁾ has the hind margins of the ventral-shields black. The other specimens from Laboean and Langkat belong to Günther's var. ϵ . Dr. P. Bleeker considered this variety as a distinct species and called it *C. Hasseltii*, as is stated by Dr. Günther l. c. and may be seen in several specimens now in the Leyden Museum, formerly in Dr. Bleeker's collection. As far as I know Dr. Bleeker never gave a description of his new species.

24. *Dryophis prasinus* Wagl.

A great many specimens of this common snake were collected by Dr. Hagen.

1) Dr. A. Günther, Reptiles of British India, p. 299.

25. *Dryophis fasciolatus* Fischer.

Three specimens of this species from Borneo, described by Dr. J. G. Fischer ¹⁾, were collected by Dr. Hagen in Laboean. They agree in all points with Fischer's description.

26. *Psammodynastes pulverulentus* Boie.

Three specimens in Dr. Hagen's collection.

27. *Psammodynastes pictus* Gthr.

It may be noticed as a curious fact, that in Dehli both species of the genus *Psammodynastes* are found side by side. Dr. M. Mocquard in his »Seconde contribution à l'histoire du genre *Psammodynastes*» ²⁾ remarks that as *Ps. pictus* was found both in Borneo and in the isle of Biliton, it would be a surprising fact, if it did not occur in Sumatra, Java and the surrounding islands. Now, with Dr. O. Boettger's statement of its occurrence in Indrapura (S. W. Sumatra) ³⁾, and the fact of its being found in Dehli, *Ps. pictus* may justly be regarded as an inhabitant of the large isle of Sumatra. The occurrence of the two species side by side in Dehli upsets Dr. Fischer's theory according to which *Ps. pictus* is to be regarded as a local variety of *Ps. pulverulentus* ⁴⁾. In my opinion there can exist little doubt about the specific difference between these two forms. They may be distinguished even at a distance without counting or comparing shields or scales. The head of *Ps. pulverulentus* has a broad trigonal form and the sides of the snout with the lips descend in a nearly perpendicular position without any remarkable curves, and so form a clearly marked *canthus rostralis*.

1) Dr. J. G. Fischer. Ueber eine Kollektion von Amphibien und Reptilien aus S. O. Borneo. Arch. f. Naturgesch. 1885. p. 66.

2) Extrait du Bulletin de la Société Philomatique de Paris. Séance du 12 Mai 1888.

3) Bericht über die Senckenbergische Naturf. Ges. zu Frankfurt a/M. 1886/87. p. 46.

4) Dr. J. G. Fischer. l. c. Arch. f. Naturgesch. 1885.

In *Ps. pictus* the head has an oblong form and the lips are bent outwards and extend, when seen from above, far beyond the width of the posterior frontals, in this manner there is formed a longitudinal concavity along the snout just above the labials; the *canthus rostralis* is not so clearly visible as in *Ps. pulverulentus*. The anterior frontals are much longer than in *Ps. pulverulentus*. The distance from the tip of the snout to the end of the vertical in *Ps. pulverulentus* equals the distance between the outer sides of the supraciliaries, in *Ps. pictus* it by far exceeds that distance and even the width of the head anywhere.

From the three Dehli specimens one was captured at Langkat, the others are from Laboean. One of these has two postoculars on each side, the other two have three postoculars. In all three the first and the third lower labial of one side meet those of the other side without chin-shields between them. This character seems to be a very constant one.

As to the coloration, the specimen from Langkat has a brown colour, without the darker band along the back but with indications of the light spots. The two specimens in Dr. Hagen's collection are of a grayish colour with a broad dark band along the back and light spots put alternatively. They all have a dark stripe from the tip of the snout through and behind the eye, in one of the grayish specimens this stripe or line extends along the neck on the sides of the body and runs with some interruptions as far as the beginning of the tail.

In the Leyden Museum there are four specimens from Borneo, two of them of a brownish, the others of a grayish colour; one of them shows a whitish line along the *canthus rostralis* above the dark line, extending along a part of the trunk. One of these specimens has only two postoculars on each side. No chin-shields between the first and third lower labials of both sides, in any of the four specimens.

28. *Lycodon aulicum* L.

One specimen in Dr. Hagen's collection.

29. *Odontomus subannulatus* Schl.

One specimen was captured in Laboean.

30. *Ophites subcinctus* Boie.

Two specimens in Dr. Hagen's collection.

31. *Leptognathus laevis* Boie.

Three specimens from Laboean; with one of them the anterior large shields on the middle-line are found to be of a white colour, whilst farther up many series of dark coloured scales are placed alternatively with as many series of white ones.

32. *Dipsas drapiezi* Boie.

Two specimens in Dr. Hagen's collection.

33. *Dipsas dendrophila* Reinw.

Represented by one specimen in both collections.

34. *Elaps furcatus* Schneid.

Three specimens in Dr. Hagen's collection.

35. *Elaps bivirgatus* Schl.

One specimen from Laboean. — Dr. Hagen describes in his article on the venomous snakes of Dehli (already quoted) a third species of the genus *Elaps* having a red belly and a black coloured back. Along the middle of the back runs a black line, and each flank is provided with three white-coloured longitudinal stripes. As none of our specimens agree with this description, I cannot make out which species Dr. Hagen had in view; perhaps it was *Elaps tetrataenia* Bleeker.

36. *Bungarus annularis* Schl.

One specimen of this very dangerous snake was found in Mr. Prakke's collection. According to Dr. Hagen this snake is very common in Dehli, often reaches a length of six feet and is generally seen in swampy countries some time before sunrise or after sunset.

37. *Ophiophagus elaps* Schl.

One very young specimen from Langkat. Dr. Hagen captured specimens of ten and eleven feet and maintains that this most dangerous of all Dehli snakes is very swift in its movements and of such an angry mood that it attacks people at the slightest disturbance and sometimes even without any evident reason.

38. *Naja tripudians* Merr.

The local variety of this species in Dehli is of a dark-brown or sometimes black colour, with two black oval spots surrounded with white on the sides of the neck, but without the curved line that unites these spots across the back in the typical specimens of the continent. Dr. Hagen maintains this snake to be an animal with nocturnal habits, as it is seldom seen in the daytime. It is very slow in its movements and hardly ever stirs to go out of the way when met with in the dark. It can spit its saliva (?) to a distance of two or three feet and aims at the eyes of the intruder.

39. *Bothrops gramineus* Shaw.

One specimen in Mr. Prakke's collection. Dr. Hagen considers the species of the genus *Bothrops*, though provided with large fangs, as less dangerous than *Bungarus annularis*.

40. *Bothrops erythrorus* Cantor.

Some specimens in Dr. Hagen's collection.

41. *Bothrops Wagleri* Boie.

This snake seems to be one of the most common vipers of Sumatra, as we never got a collection without it. In the Malay language it is called »Ular nanti bulan'', as the aborigines maintain that it stays at the same place for a month before it seeks another hiding-place. Dr. Hagen knows for certain that one specimen was seen on the same trunk for weeks together, until one of the doctor's friends slew it and took it home.

42. *Bothrops Hageni* v. L. d. J.

This species is represented in Mr. Prakke's collection by one specimen. According to Dr. Hagen (who does not believe it to be a young specimen of *Bothrops sumatranus* Raffles as suggested by me ¹⁾), but is convinced that it is a proper species) this snake attains a length of three feet, is of a grass-green colour on the back, somewhat lighter on the sides with some blue spots, not very clearly visible against the surrounding green.

43. *Platurus Fischeri* Jan.

The only specimen in Dr. Hagen's collection was captured in the forests of Serdang at a distance of nearly a day's journey from the sea.

Leyden Museum, 30 December 1889.

1) Notes from the Leyden Museum. Vol. VIII. p. 43.

NOTE IX.
ON LUCANUS ELAPHUS, HERBST.

BY

C. RITSEMA Cz.

In consequence of my enumeration of the Lucanidae hitherto known as inhabiting the island of Sumatra ¹⁾ (Notes Leyd. Mus. 1889. p. 233), I received a letter from Mr. G. Albers of Hannover, in which this well-known student of Lucanoid Coleoptera calls my attention upon the incorrectness of the supposed identity of *Eurytrachelus purpurascens* Voll. and *Lucanus elaphus* Herbst (l. c. p. 236), stating that the latter name almost undoubtedly is relative to *Eurytrachelus concolor* Blanch. (= *Saïga* Oliv. nec Auct.). I without delay examined the question and, in consulting the figures given by Voet, Herbst and Olivier, I fully agree with Albers, notwithstanding Voet calls his insect in the Dutch language »Americaansch vliegend Hart'', and Herbst and Olivier respectively mention Virginia and South America as its native country.

I do not know for what reason the Authors of the Munich Catalogue indicate »Sumatra'' as being the habitat of *Lucanus elaphus* Herbst, and I am sorry to have based my supposition upon this incorrect statement. (See also Albers in Deuts. Entom. Zeits. 1883. p. 224).

1) Very recently (Ann. and Mag. of Nat. Hist. January 1890. p. 36) Mr. Chas. O. Waterhouse has described a new Sumatran species of the genus *Aegus* under the name of *Aegus Curtisii*. It is, according to the author, nearest to *Aegus amictus* H. Deyr., though at first sight it might be supposed to be allied to *Aegus laevicollis* Saund or *Eschscholtzi* Hope. — At the same time (l. c.) Mr. Waterhouse describes an *Aegus*-species from the Andaman Islands under the name of *Aegus Roepstorffi*, which, according to specimens in our Museum, inhabits also the Nicobar Islands and bears in the late Count Mnisech's collection the name of *Aegus andamanus* H. Deyr.

NOTE X.

CONTRIBUTIONS TOWARDS THE KNOWLEDGE OF THE
COLEOPTEROUS FAUNA OF WEST SUMATRA.¹⁾

BY

C. RITSEMA Cz.

A second, third and fourth consignment of insects, sent by Mr. J. D. Pasteur to the Leyden Museum, have recently arrived. Besides some Hemiptera, Hymenoptera, Diptera and Orthoptera, all captured in the neighbourhood of Padang Sidempoean (resid. Tapanoeli: North West Sumatra), they contained a more considerable number of Coleoptera from the same locality.²⁾ These latter belong to the following species several of which were not yet represented in the Leyden Museum, whereas some others certainly will prove to be new to science. Those species which, according to the insect-collection of our Museum, occur also in East Sumatra are indicated by an asterisk, a way of acting which I thought of interest for the sake of our knowledge of the geographical distribution of the Coleoptera in the island of Sumatra. Moreover those species which are described at a date posterior to the Munich Catalogue are followed up by their citation.

1) See also: Notes from the Leyden Museum. 1889. p. 241.

2) The third and fourth consignment contained moreover a beautiful series of Lepidoptera, all captured by Mr. Pasteur himself at Padang Sidempoean (N. W. Sumatra), at Assahan (N. E. Sumatra), and on his way across the country from one place to the other. In his accompanying letter Mr. Pasteur tells me that none of the specimens are collected in places higher than 100 M. above the level of the sea. Later on I have the intention to give a full list of the collected species.

Cicindelidae.

- **Cicindela undulata* Dej. — 2 ex.
 * » *superba* Kollar. — 2 ex.
 **Collyris* spec. — 1 ex.

Carabidae.

- **Ophionea interstitialis* Schm. G. — 1 ex.
 **Pheropsophus javanus* Dej. — 3 ex.
 * » *fuscicollis* Dej. — 1 ex.
Catascopus splendidus W. W. Saund. — 1 ex.
Cryptocephalomorpha Gaverei Rits. (Tijdschr. v. Entom. XVIII. 1875. p. xci) = *Adelotopus marginatus* C. O. Waterh. (Trans. Ent. Soc. London. 1877. p. 2). — 1 ex.
Clivina Parryi Putz. — 1 ex.
 **Chlaenius javanus* Chaud. — 4 ex.
 * » *hamifer* Chaud. — 1 ex.
 * » *lynæ* Chaud. — 3 ex.
 * » *ducalis* Chaud. (Ann. Mus. Civ. Genova. VIII. 1876. p. 155). — 1 ex.
 **Orthogonius Hageni* R. Oberth. (Notes Leyd. Mus. 1883. p. 222). — 1 ex.
 **Dioryche laticeps* Dej. — 1 ex.

Dytiscidae.

- **Copelatus tenebrosus* Régb. (Notes Leyd. Mus. 1880. p. 210; — Midden-Sumatra. Coleoptera. p. 10; pl. 1, fig. 3) = *pusillus* Sharp (Monogr. Dytiscidae. 1882. p. 580). — 1 ex.
 **Cybister tripunctatus* Oliv. — 2 ex.
 **Eretes sticticus* Linn. — 2 ex.

Staphylinidae.

- Erechomus* spec. — 1 ex.

Histeridae.

- **Plaesius javanus* Erichs. — 2 ex.
Platysoma striale Mars. var. — 1 ex.

Platysoma debile Mars. — 1 ex.

» *sundae* Schmidt (Entom. Nachricht. 1889. p. 332;
— Notes Leyd. Mus. 1890. p. 14). — 1 ex.

Nitidulidae.

Epuraea latissima Reitt. (Notes Leyd. Mus. 1880. p. 42;
— Midden-Sumatra. Coleoptera. p. 18). — 1 ex.

Atarphia convexiuscula Grouv. nov. spec. (Notes Leyd. Mus. 1890. p. 15). — *N.B.* Described as belonging to a new genus (*Pseudoplatychora* Grouv.) but afterwards recognized by Mr. Grouvelle as belonging to the genus *Atarphia* Reitt. (Wien. Ent. Zeitung. III. 1884. p. 260). — 4 ex.

Trogositidae.

**Latolaeva ovalis* Mc L. (Reitter, Verhandl. Naturf. Ver. in Brünn. Bd. XIV. 1876. p. 49). — 1 ex.

Dermestidae.

**Aethriostoma undulata* Motsch. — 1 ex.

Lucanidae.

**Odontolabis Dalmani* Hope. — 1 ♂.

**Eurytrachelus purpurascens* Voll. — 5 ♂, 3 ♀.

Passalidae.

**Leptaulax dentatus* Fabr. — 1 ex.

**Aceraius borneanus* Kaup (Monogr. Passalid. 1871. p. 52).
— 1 ex.

Scarabaeidae.

(Coprini).

**Catharsius molossus* Fabr. — 2 ♂, 3 ♀.

**Aphodius marginellus* Fabr. — 1 ex.

(Melolonthini).

**Apogonia rauca* Fabr. — 2 ex.

Haplidia bidentata Burm. — 1 ex.

Lepidiota spec. — 1 ex.

* » *pauper* Voll. in Mus. Leyd. — 1 ex.

**Tricholepis grandis* Burm. — 2 ex.

**Exopholis hypoleuca* Burm. — 3 ex.

(Rutelini).

**Anomala cupripes* Hope. — 3 ex.

* » *chalcites* (Dej.) Sharp (Notes Leyd. Mus. 1881. p. 237; — Midden-Sumatra. Coleoptera. p. 39). — 1 ex.

* » spec. — 1 ex.

» spec. — 1 ex.

* » spec. — 1 ex.

» *rotundiceps* Sharp (Notes Leyd. Mus. 1881. p. 234; — Midden-Sumatra. Coleoptera. p. 38). — 1 ex.

* » *breviceps* Sharp (Notes Leyd. Mus. 1881. p. 235; — Midden-Sumatra. Coleoptera. p. 38). — 1 ex.

**Popilia foreolata* Sharp (Notes Leyd. Mus. 1881. p. 240; — Midden-Sumatra. Coleoptera. p. 41). — 2 ex.

**Adoretus umbrosus* Fabr. — 3 examples, two of which were taken paired.

(Dynastini).

**Xylotrupes Gideon* Linn. — 3 ♂, 3 ♀.

**Chalcosoma Atlas* Linn. — 1 ♀.

(Cetonini).

**Glycyphana malayensis* Guér. — 1 ex.

» *Bowringi* Wall. — 1 ex. — *N. B.* I think Kraatz's var. *melanaria* from Nias (Deuts. Entom. Zeits. 1885. p. 80) will prove to be better referable to this species than to *Glycyphana rufovittata* Wall. nec. Guér. (= *illusa* O. E. Jans.¹⁾ = *vittata* Kraatz, l. c.). — It may also be said here that in *Bowringi*

1) Cist. Ent. II. p. 608. Febr. 1881.

Wall. the sutural margins of the elytra are acutely prolonged at the end, and that in this species the pygidium is provided with a longitudinal crest, which, however, does not extend to the apical margin. In *rufovittata* Guér. (*illusa* Jans. is unknown to me) the sutural margins are not at all prolonged at the end, and the pygidium is not crested.

Buprestidae.

**Chrysochroa fulminans* Linn. — 7 ex.

**Belionota scutellaris* Fabr. — 1 ex.

**Agrilus armatus* Fabr. — 1 ex.

» spec. — 1 ex.

Elatерidae.

Lacon lupinosus Cand. — 1 ex.

**Alaus lacteus* Fabr. — 2 ex.

**Pachyderes macrothorax* Wied. — 2 ex. (♂ and ♀).

Cardiophorus carduelis Cand. — 1 ex.

**Ludius macassariensis* Cand. — 1 ex. — Dr. Candèze wrote me about this specimen: »Je l'ai comparé à mes *macassariensis* et n'y ai pas trouvé de différences."

**Hemiops crassa* Gylh. — 1 ex.

Malacodermidae.

(Lycidae).

Lycostomus spec. — 1 ex.

Conderis spec. — 1 ex.

Ditoneces spec. — 1 ex.

(Calochromidae).

Calochromus spec. — 1 ex.

(Lampyridae).

**Pyrocoelia terminata* Gorb. (Trans. Ent. Soc. London. 1880. p. 92. — Olivier, Notes Leyd. Mus. 1886. p. 207). — 3 ex.

- **Luciola pallescens* Gorb. (Trans. Ent. Soc. London. 1880. p. 102; — Midden-Sumatra. Coleoptera. p. 70). — 3 ex.

(Telephoridae).

- **Telephorus ruficornis* Fabr. (Gorham, Midden-Sumatra. Coleoptera. p. 72). — 1 ex.
Silis spec. — 2 ex.

L y m e x y l o n i d a e.

- **Atractocerus emarginatus* Casteln. — 1 ex.

T e n e b r i o n i d a e.

- **Uloma denticornis* Fairm. (Notes Leyd. Mus. 1882. p. 225; — Midden-Sumatra. Coleoptera. p. 84). — 1 ♀.
 * » *rufilabris* Fairm. (Notes Leyd. Mus. 1882. p. 226; — Midden-Sumatra. Coleoptera. p. 85). — 1 ex.
 **Nyctobates aereipennis* Fairm. (Notes Leyd. Mus. 1882. p. 228; — Midden-Sumatra. Coleoptera. p. 86). — 2 ♀.
 **Encyalesthus aeruginosus* Fabr. — 4 ex.
 **Eucyrtus pretiosus* Lacord. — 1 ex.
 » *carbunculus* Fairm. (Ann. Soc. Ent. de Belgique. XXIX. 1885. p. cix). — 1 ex.
 **Gauromaia dives* Pascoe (Fairmaire, Notes Leyd. Mus. 1882. p. 240; — Midden-Sumatra. Coleoptera. p. 92). — 1 ex.
 **Dietysus picitarsis* Fairm. (Notes Leyd. Mus. 1882. p. 250; — Midden-Sumatra. Coleoptera. p. 98). — 1 ex.
Rhygmodus spec. — 1 ex.
 » spec. — 1 ex.

L a g r i i d a e.

- **Lagria rufofusca* Fairm. (Notes Leyd. Mus. 1882. p. 259; — Midden-Sumatra. Coleoptera. p. 103). — 1 ex.

M o r d e l l i d a e.

- **Mordella tricolor* Wied. — 1 ex.

Cantharidae.

- **Zonitis macroxantha* Fairm. (Notes Leyd. Mus. 1887. p. 194). — 1 ex.

Curculionidae.

- **Episomus pauperatus* Fabr. — 2 ex.
 * » spec. — 1 ex.
 **Myllocerus* spec. — 2 ex.
 **Eugnathus alternans* Fährs. — 1 ex.
Apion spec. — 1 ex.
 **Apoderus cygneus* Fabr. — 1 ex.
 * » *tranquebaricus* Fabr. — 1 ex.
 * » *hystrix* Fabr. — 1 ex.
 **Attelabus bispinosus* Gylh. var. — 1 ex.
Rhynchites spec. — 1 ex.
Mecistocerus spec. — 4 ex.
Copturus spec. — 1 ex.
Ceutorrhynchus spec. — 1 ex.
 **Cyrtotrachelus* spec. — 2 ♀.
 **Protocerus colossus* Oliv. — 2 ♂ and 2 ♀.
 **Rhynchophorus schach* Fabr. — 6 ♂ and 5 ♀, two of which were taken paired.
 **Cercidocerus fabrilis* Gylh. — 1 ex.
 **Sphenophorus sericans* Wied. — 1 ex.
 * » *planipennis* Gylh. — 3 ex.
 * » spec. — 1 ex.
 * » *sordidus* Germ. — 1 ex.
Calandra orizae Linn. — 2 ex.
 * » spec. — 1 ex.
 * » spec. — 2 ex.
 **Cryptoderma Fabricii* Rits. (Notes Leyd. Mus. 1882. p. 186; — id. 1885. p. 54). — 1 ♀.

Scolytidae.

- **Platypus lepidus* Chap. — 1 ex.

Brenthidae.

**Baryrrhynchus dehiscens* Gylh. — 1 ♂.

**Agriorrhynchus undulatus* Power (Petites Nouv. Entom. II. 1878. p. 241). — 1 ♂.

**Trachelizus Beccarii* Power, in Mus. Leyd. — 4 ex.

Anthribidae.

Eugigas insulindiae v. d. Poll, nov. spec. (will be described in the present part of this Journal). — 1 ♀.

Xenocerus saperdoides Gylh. — 1 ♂. — The Anthribid figured by Labram & Imhoff as *Xenocerus saperdoides* var. does not belong to this species but is identical with *X. flagellatus* Fåhrs.

**Xylinades Westermanni* Gylh. — 1 ♀.

**Araecerus fasciculatus* Deg. (= *coffae* Fabr.). — 1 ex.

Cerambycidae.

(Prionini).

**Aegosoma marginale* Fabr. (= *javanicum* Redt.). — 1 ♀.

(Cerambycini).

**Pachydissus* spec. — 1 ♂ and 1 ♀.

Pachylocerus pilosus Guér. (? = *unicolor* Dohrn, Stett. Ent. Zeit. 1878. p. 359; — id. 1880. p. 149; — id. 1883. p. 158). — 1 ex. — Of this species the Leyden Museum possessed already a specimen from Java: Kemanglen, Tegal Residency, captured in August (Lucassen), another from Sumatra (v. d. Bossche) and two specimens, apparently ♂ and ♀, from Borneo (Schwaner). — *Pachylocerus crassicornis* Oliv. is represented in our Museum by a single specimen from the old collection of Calkoen's. *Pachylocerus plumiferus* Pascoe, and perhaps also *P. corallinus* Hope, may, I think, prove to be mere varieties of this species.

**Rhytidodera simulans* White. — 1 ex.

**Gnatholea subnuda* Lacord. — 2 ♂ and 1 ♀.

- **Ceresium* spec. — 1 ex.
 **Clytanthus annularis* Fabr. — 1 ex.
 **Eurycephalus Lundi* Fabr. — 3 ♀.
Noëmia flavicornis Pasc. — 1 ♀.

(Lamiini).

- **Epepeotes luscus* Fabr. — 2 ♂ and 2 ♀.
 **Monohammus fistulator* Germ. — 1 ♂ and 5 ♀.
 **Batocera albofasciata* de Geer. — 1 ♂ and 1 ♀.
 * » *Helena* Thoms. (= *Attila* Pasc.). — 1 ♂ and 1 ♀.
 **Olenecamptus bilobus* Fabr. — 1 ♀.

Moechotypa thoracica White. — 1 ♀. — This species is incorrectly recorded in the Munich Catalogue as a synonym of *Lamia fuscator* Fabr. which latter, according to Kolbe (Arch. f. Naturgesch. 1886. I. p. 222), even belongs to another genus, viz. *Niphona* Muls. — In a consignment of beetles, directly received by Mr. Neervoort van de Poll from Sikkim, a very fine male example of *Moechotypa thoracica* White was present.

- **Praonetha melanura* Pasc. — 1 ♀.
 **Glenea honora* Pasc. (Waterhouse, Aid Identif. Ins. pl. 130, fig. 6.) — 2 ♂ and 2 ♀.
 * » *funerula* Thoms. — 1 ex.
 * » spec. — 1 ex.
 **Nupserha* spec. — 1 ex.
 **Astathes nitens* Fabr. — 1 ex.
 » spec. — 2 ex.
 » spec. — 2 ex.
 » spec. — 2 ex.

Chrysomelidae.

(Sagrinae).

Sagra Petelii Lacord. — 1 ex.

(Criocerinae).

- **Lema quadripunctata* Oliv. — 1 ex.
 * » *Beccarii* Jacoby (Ann. Mus. Civ. di Genova. XX. 1884. p. 192). — 1 ex.

(Eumolpinae).

**Pyropida sumptuosa* Baly. — 1 ex.

**Colasposoma mutabile* Baly (= *nigriventre* Jacoby *nec* Baly).
— 3 ex. — See: Jacoby, Notes Leyd. Mus. 1884. p.
22, and Midden-Sumatra. Coleoptera. p. 146. — Le-
fèvre, Notes Leyd. Mus. 1887. p. 261.

Colaspoides spec. — 1 ex.

(Chrysomelinae).

**Chalcolampra octodecimguttata* Fabr. (Jacoby, Notes Leyd.
Mus. 1884. p. 27; — Midden-Sumatra. Coleoptera. p.
152). — 1 ex.

(Halticinae).

**Nisotra gemella* Erichs. (Jacoby, Notes Leyd. Mus. 1884. p.
31; — Midden-Sumatra. Coleoptera. p. 153). — 4 ex.

* » spec. — 1 ex.

**Graptodera cyanea* Weber. — 1 ex.

**Sphaerometopa acroleuca* Wied. — 1 ex.

**Eucycla varipes* Jacoby (Notes Leyd. Mus. 1884. p. 210).
— 1 ex.

**Homelea variabilis* Jacoby (Notes Leyd. Mus. 1884. p.
211). — 1 ex.

(Galerucinae).

**Oödes pectoralis* Clark (Jacoby, Notes Leyd. Mus. 1884.
p. 37; — Midden-Sumatra. Coleoptera. p. 159). — 1 ex.

**Aulacophora dimidiata* Guér. (Jacoby, Notes Leyd. Mus.
1884. p. 38; — Midden-Sumatra. Coleoptera.
p. 160). — 1 ex.

* » spec. — 1 ♂.

* » *luteicornis* Fabr. (Jacoby, Notes Leyd. Mus.
1884. p. 40; — Midden-Sumatra. Coleoptera.
p. 161). — 1 ♂ and 1 ♀.

* » *flavomarginata* Duviv. (Notes Leyd. Mus. 1884.
p. 119). — 1 ♀.

* » spec. — 2 ♂ and 1 ♀.

**Rhaphidopalpa serena* Bohem. — 3 ex.

» spec. — 2 ex.

- **Macrima malayensis* Jacoby (Notes Leyd. Mus. 1884. p. 216). — 1 ex.
- **Cerophysa sumatrensis* Jacoby (Notes Leyd. Mus. 1884. p. 45; — Midden-Sumatra. Coleoptera. p. 167). — 1 ♂.
- **Galerucella Hageni* Jacoby (Notes Leyd. Mus. 1887. p. 235). — 1 ex.
- **Sermylroides basalis* Jacoby (Notes Leyd. Mus. 1884. p. 64; — Midden-Sumatra. Coleoptera. p. 171). — 2 ex., one of the typical form, the other of the variety; both are females. — As to the synonymy see Baly, in Ent. Mo. Mag. XXIII. 1887. p. 268.
- **Haplosonyx testaceus* Weber. — 1 ♂ and 3 ♀.
» spec. — 1 ex.
- Carithea quadripustulata* Baly (Ent. Mo. Mag. XIII. 1877. p. 226). — 1 ex. of a large variety with large elytral spots, and the black thoracical vitta interrupted in the middle.
- Antipha abdominalis* Jacoby (Notes Leyd. Mus. 1884. p. 52; — Midden-Sumatra. Coleoptera. p. 174). — 5 ex.
» spec. — 1 ex.
» spec. — 1 ex.
- Monolepta basimarginata* Boisd. (Jacoby, Notes Leyd. Mus. 1884. p. 54; — Midden-Sumatra. Coleoptera. p. 175). — 4 ex.
- * » *bifasciata* Fabr. (Jacoby, Notes Leyd. Mus. 1884. p. 53; — Midden-Sumatra. Coleoptera. p. 175). — 6 ex.
- **Theopea* spec. — 1 ex.
(Hispidinae).
- **Platypria* spec. — 1 ex.
(Cassidinae).
- **Aspidomorpha assimilis* Bohem. (Gorham, Midden-Sumatra. Coleoptera. p. 181). — 3 ex.
- * » *elevata* Fabr. var. (Gorham, Midden-Sumatra. Coleoptera. p. 182). — 4 ex.
- * » *miliaris* Fabr. — Several examples.
- Notes from the Leyden Museum, Vol. XII.

- **Coptocycla scalaris* Weber. — 3 ex.
 * » *punctata* Weber. — 4 ex.
 * » *catenata* Bohem. — 1 ex.

E r o t y l i d a e.

(Languridae).

- **Tetralanguria elongata* Fabr. (Gorham, Midden-Sumatra.
 Coleoptera. p. 183). — 1 ex.

(Erotylides).

- **Triplatoma Macleayi* Lacord. — 1 ex.
 * » *attenuata* Crotch. (Gorham, Midden-Sumatra.
 Coleoptera. p. 184). — 3 ex.

E n d o m y c h i d a e.

- **Eumorphus quadriguttatus* Ill. — 2 ex.
 * » spec. — 1 ex.

C o c c i n e l l i d a e.

- **Coccinella arcuata* Fabr. — 2 ex.
Coelophora spec. — 2 ex.
 » spec. — 1 ex.
Verania lineata Thunb. — 1 ex.
 **Rodolia rubea* Muls. — 1 ex.
 * » spec. (Gorham, Midden-Sumatra. Coleoptera. p.
 193:?*Clanis pubescens* Fabr.) — 1 ex.
 **Epilachna pusillanima* Muls. (Gorham, Midden-Sumatra.
 Coleoptera. p. 193). — 1 ex.

Of the 194 species mentioned in the above enumeration not less than 140 (those preceded by an asterisk) are, up to this day, also sent to the Leyden Museum from East Sumatra.

NOTE XI.

ON CERCOPITHECUS TALAPOIN ERXLEBEN.

BY

C. L. REUVENS.

February 1890.

(Plate 2).

As Prof. Schlegel, in March 1876, finished his »*Mono-graphie des Singes*» there was no specimen of *C. talapoin* in the Leyden Museum. He, therefore, ranged this species as a subdivision in the great group of *Cercopithecidae*, saying that, according to Is. Geoffroy St Hilaire, this species was characterized by only three tubercles on the fifth lower molar.

Having worked, some time ago, in the Monkeys of the Leyden Museum, I found that, since 1876, the collection was increased by three specimens of this species. On the bottom of the stand of one of these specimens I found the following remark, written by the hand of Schlegel:

» *Cercopithecus talapoin*. ♂ ad. Tué au Gabon près de » Dongola. La tête étant fortement endommagée on n'en » a pu tirer le crâne dont la dernière molaire de la mâchoire » inférieure offre toutefois dans cet individu quatre tubercu- » les absolument comme dans tous les autres *Cercophitèques*.»

My attention once having been called upon this subject, I examined the skull of one, and the skeleton of another of the three above mentioned specimens, and found that the adult ones have on their last molar in the lower maxilla four well-distinguished tubercles, in the upper maxilla, however, the crown of the last molar is nar-

rowed posteriorly and the two hindmost tubercles are so small that, superficially examined, they might be considered to be one single tubercle. It may be remembered that this peculiar shape of the last upper molar cannot be considered to be an essential character of any specific value, as it is met with in the skull of some specimens belonging to different species, while in others it is entirely wanting. This peculiar form I found, for instance, in skulls of:

C. cynosurus (Jent. Cat. ost. e.) ¹⁾, *C. callitrichus* (Jent. Cat. ost. j.), *C. pygerythrus* (Jent. Cat. ost. f, c.), *C. mona* (Jent. Cat. ost. c.), *C. pogonias* (Jent. Cat. ost. a.), *C. diana* (Jent. Cat. ost. f.), *C. büttikoferi* (Jent. Cat. ost. d.).

The stuffed specimens of *Talapoin*, from which the skulls were taken, agree perfectly with the descriptions given by Buffon and Geoffroy and with the figure in the »Mammifères» of Cuvier.

Before giving my own remarks on this matter, I may be allowed to make a short quotation of what Geoffroy has said on his genus *Miopithecus*:

Mémoires du Muséum d'Histoire Naturelle. T. XVII. 1828.

On p. 144 the author says that he has seen a live Talapoin and that »la position des narines est tellement »incertaine que je l'ai vu prendre plusieurs fois pour un »singe américain."

Comptes-rendus hebdomadaires des séances de l'Académie des Sciences. T. XV. 1842.

Here, p. 720, two species of a new genus (*Miopithecus*) are mentioned: »qui caractérisent à la fois plusieurs modifications très remarquables du système dentaire et des organes des sens." In a note it is said »Ces deux espèces sont »le Talapoin de Buffon et une espèce nouvelle, le Miopithecus chevelu (*M. capillatus*), très voisin du Talapoin,

1) Muséum d'Histoire Naturelle des Pays-Bas. Tome IX. Jentink, Catalogue stéologique des Mammifères.

» mais un peu plus grand et à pelage d'un roux légèrement
 » verdâtre. Quant aux caractères génériques, les principaux
 » sont tirés de la dernière molaire inférieure, qui est petite
 » et n'a que trois tubercules (ce genre présente seul ce
 » caractère), et de l'encéphale et des organes des sens, très
 » remarquables par leur développement. Ces derniers caractères
 » lient intimement les Miopithèques à divers singes
 » américains, tels que les Saïmiris et les Callitriches, dont
 » ils ont presque aussi la taille, et dont ils se rapprochent
 » même par la disposition si caractéristique des narines."

On p. 1037 is observed » Le genre Miopithèque (*Miopithecus*)
 » établi pour la première fois dans ce travail, mais déjà
 » indiqué dans les Comptes-rendus, a pour type un Singe
 » depuis longtemps connu, le Talapoin de Buffon. L'auteur
 » fait connaître les caractères que présente la conformation
 » générale de la tête et les modifications caractéristiques
 » des organes des sens. Le Talapoin, dont l'auteur avait
 » d'abord cru pouvoir rapprocher une autre espèce, reste
 » jusqu'à présent le seul Miopithèque dont l'existence soit
 » suffisamment constatée."

Archives du Muséum d'Histoire naturelle.
 Tome II. 1841.¹⁾

Describing the shape and position of the nostrils and the difference in the thickness of the os internasale, Geoffroy remarks, p. 522, » les singes de l'Ancien Monde à cloison » internasale mince et à narines inférieures et les singes » américains à cloison large et épaisse et narines latérales." The author says that there are transitional forms, as *Eriodes* and *Lagothrix* of the New- and *Miopithecus* and *Semnopithecus* of the Old-World. Therefore, adds Geoffroy, the great value, attributed by Buffon to the different thickness of the os internasale is much decreased.

Of the long description of his new genus *Miopithecus*, I quote only the following essential points:

1) Peculiarly enough the author quoted in this volume (1841) what is said on the subject in the Comptes-rendus, Tome XV, 1842.

On p. 549 »Crâne volumineux, s'élevant supérieurement
 »au dessus des orbites. Museau très-court Nez très-
 »peu saillant; cloison inter-nasale assez épaisse; narines de
 »forme allongée, ouvertes, non pas seulement sous le nez,
 »mais à la fois inférieurement et latéralement
 »Dernière molaire de chaque mâchoire plus petite que les
 »précédentes; l'inférieure se rétrécissant en arrière, n'ayant
 »que trois tubercules, savoir: deux antérieurs, disposés
 »comme ceux des autres machelières, et un talon, plus
 »étroit que le reste de la dent. La supérieure offrant une
 »disposition analogue, et beaucoup moins étendue d'avant
 »en arrière que transversalement."

On p. 551 »Parmi les caractères compris dans la carac-
 »téristique, j'insisterai ici sur la forme générale de la tête
 »et la brièveté du museau, et sur ceux qui sont relatifs
 »au système dentaire. Par les premiers, les Miopithèques,
 »selon le nom que j'ai donné au genre dont le Talapoin
 »est le type, se placent nécessairement au dessus des vrais
 »Cercopithèques, et se lient avec les Semnopithèques. Par
 »les seconds, et particulièrement par l'existence à la der-
 »nière molaire inférieure, de trois tubercules seulement,
 »ils sont au contraire dans des conditions toutes spéciales
 »et nettement caractéristiques."

On p. 552 »L'ouverture antérieure des fosses nasales,
 »fait déjà signalé par Daubenton, remonte jusqu'au dessus
 »du niveau inférieur des fosses orbitaires. Ce caractère re-
 »marquable résulte, à la fois, de la plus grande étendue
 »longitudinale de cette ouverture, de la brièveté de la face,
 »et du diamètre considérable des orbites Elles (les
 »orbites) ne sont séparées intérieurement que par une cloison
 »osseuse très-mince, transparente même dans une partie
 »de son étendue, comme chez plusieurs Singes américains.
 »Le diamètre antéro-postérieur du grand trou occipital est
 »moindre que son diamètre transversal. On sait que le
 »contraire a ordinairement lieu."

On p. 553 »Il est à remarquer que toutes les modifi-
 »cations organiques qui distinguent le Talapoin ou mieux,

» d'une manière plus générale, les Miopithèques des Cerco-
 » pithèques et de tous les autres Singes de l'Ancien-Monde,
 » tendent à les rapprocher des Singes américains."

On p. 554 » La description et la figure de M. Frédéric
 » Cuvier" (Mammifères, livr. XLIII, 1824) » donnent en
 » particulier une idée fort exacte de la coloration du Tala-
 » poin et des autres caractères extérieurs que l'on doit con-
 » sidérer comme de valeur spécifique."

Catalogue méthodique de la collection des
 Mammifères. Paris, 1851.

On pp. 10 and 18 the author gives the characteristics
 of the genus *Miopithecus*.

During my recent visit to the Musea of Paris and London,
 for other purposes, I was kindly allowed to examine by
 the way the skulls and skeletons of Talapoin. The exami-
 nation of aforesaid materials, as well as the comparison
 of the Leyden skulls with those of other *Cercopithec*i, has
 led me to the following conclusions:

On the fifth or last molar of the lower mandible
 of adult specimens there are four tubercles, while on the
 same molar of the upper mandible the hindmost tuber-
 cles are very small, the crown showing a strong inclina-
 tion of becoming narrowed posteriorly, a character which
 is also found in the dentition of some other *Cercopithec*i.

The foramen occipitale agrees as regards its measure-
 ments with that of other species.

Like in the skull of other *Cercopithec*i, the nostrils
 reach a little higher than the basis of the orbita.

The transparency of the os internasale may not be con-
 sidered to be a character of specific value. An examination
 of different species of *Cercopithecus* shows that in some
 specimens the os internasale is transparent, while in other
 ones this is not the case. I hardly need to say that much
 care is indicated in studying bones of animals which have
 lived in Menageries or Zoological Gardens.

The habitus of the skull does not differ from that of
 the other *Cercopithec*i.

Prof. Rosenberg in Utrecht was kind enough as to send me a specimen on liquor, died in the Zoological Garden at Rotterdam (vide »der Zool. Garten'' 1889, p. 186). This specimen, the fourth molar of which shows very clearly the four tubercles, agrees perfectly well with the figure in the »Mammifères'' of Cuvier.

My conclusion is, after all, that there is no reason to separate the Talapoin generically from the other *Cercopithec*i.

EXPLANATION

OF

Plate 2.

- Fig. 1. Skull of *Cercopithecus talapoin* (Jent. Cat. ost. a.).
 „ 2. Lower jaw of idem.
 „ 3. Upper jaw of idem.
 „ 4. Left half of upper jaw of *C. mona* (Jent. Cat. ost. c.).
 „ 5. „ „ „ „ „ „ *C. büttikoferi* (Jent. Cat. ost. d.).

NOTE XII.

A NEW SPECIES OF THE EROTYLID
GENUS EPISCAPHA.

DESCRIBED BY

the Rev. H. S. GORHAM.

Episcapha xantho-pustulata, n. sp.

Staturâ *E. cruciate* Lac. similis, nigropicea, capite thoraceque crebre punctatis, nitidiusculis, hoc margine laterali parum reflexo, angulis anticis acutis, elytris maculis duabus magnis flavis una basali, altera subapicali sublunata prope suturam angustata; antennis brevibus, articulis 2—8 moniliformibus subaequalibus. — Long. 10 millim.

Hab. Sumatra: Boenga mas ¹⁾) and Soekadana (J. C. van Hasselt).

Oblong, nearly equal in breadth before and behind, pitchy-black, pubescent, very thickly and finely, almost obsoletely punctured, the head more distinctly so than the thorax. The antennæ are about as long as the head and thorax, the second to eighth joints scarcely longer than wide, the club as in *E. cruciata*. The elytra are very thickly and very finely punctured, each puncture giving rise to a hair, the four yellow spots are placed much as in *E. cruciata*, but the hinder pair are more transverse, and a little excavated on the apical side, so that the apex itself is more widely black. The basal spot is actually on the base in the middle (as in *E. cruciata*) but the entire margin from

1) This is the *Episcapha* n^o. 3 of „Midden-Sumatra. Coleoptera. p. 185.”

the callus, and the suture are narrowly black. In *E. cruciata* there is a small black spot on the callus which is wanting here. The underside and legs are pitchy-black, prosternum even, not compressed, punctured.

This insect is at first sight like *E. cruciata* but rather wider and with paler yellow spots. It is, however, quite easily at once distinguished, by the generic character of having the third joint of the antennæ not longer than the fourth, by the pubescence, close punctuation and other specific differences.

One specimen was captured in each of the above localities.

NOTE XIII.

CARCINOLOGICAL STUDIES IN THE LEYDEN MUSEUM.

BY

Dr. J. G. de MAN.

N^o. 4. ¹⁾

(Plate 3—6).

LIST OF SPECIES.

Carpilodes tristis <i>Dana</i> .	Leptograpsus Ansoni <i>H. Milne Edw.</i>
Actaeodes Richtersii <i>de Man</i> .	Pachygrapsus crassipes <i>Randall</i> .
Xantho punctatus <i>H. Milne Edw.</i>	Plagusia speciosa <i>Dana</i> .
" (Lachnopus) tahitensis	Clistocoeloma merguensis <i>de Man</i> .
<i>de Man</i> .	Sesarma Aubryi <i>A. Milne Edw.</i>
" nudipes <i>A. Milne Edw.</i>	" Edwardsii <i>de Man</i> , var.
Lophozozymus superbus <i>A. Milne</i>	brevipes <i>de Man</i> .
<i>Edw. (nec Dana)</i> .	" Smithii <i>H. Milne Edw.</i>
Leptodius gracilis <i>Dana</i> .	" atrorubens <i>Hess</i> .
Chlorodopsis areolata <i>H. Milne Edw.</i>	" trapezoidea <i>Guérin</i> .
Heteropanope serratifrons <i>Kinahan</i> .	" quadrata <i>Fabr</i> .
Pilumnus globosus <i>Dana</i> .	" erythrodactyla <i>Hess</i> .
" tahitensis, n. sp.	" bataviana, n. sp.
Trapczia guttata <i>Rüpp. (Heller)</i> .	" barbinana, n. sp.
" flavopunctata <i>Eyd. & Soul</i> .	Eupagurus hirtimanus <i>White</i> .
Eriphia scabricula <i>Dana</i> .	Calcinus elegans <i>H. Milne Edw.</i>
Goniocaphyra truncatifrons <i>de Man</i> .	" nitidus <i>Heller</i> .
Xenophthalmodes Moebii <i>Richters</i> .	Clibanarius vulgaris <i>Dana</i> .
Geryon trispinosus <i>Herbst</i> .	" taeniatus <i>H. Milne Edw.</i>
Macrophthalmus crassipes <i>H. Milne</i>	Alpheus pachychirus <i>Stimpson</i> .
<i>Edw.</i>	Hetairocaris orientalis, n. g. et n. sp.
" pacificus <i>Dana</i> .	Penaeus Macleayi <i>Haswell</i> .
Myctiris longicarpus <i>Latr</i> .	

1) See for N^o. 1 and 2: Vol. III, p. 121 and p. 245, and for N^o. 3: Vol. V, p. 150.

1. *Carpilodes tristis* Dana.

Carpilodes tristis, Dana, United States Exploring Expedition, Crustacea, T. I, p. 193, Pl. IX, fig. 7.

One male from Tahiti.

The nearest ally of this species is *Carpilodes laevis* A. Milne Edwards. Of this latter form I have before me a male specimen from Amboina, which I have described two years ago (Archiv f. Naturgeschichte, Jahrg. LIII, p. 236), and so I am able to indicate the differences. Unfortunately the cephalothorax of the specimen of *tristis* is somewhat asymmetric posteriorly, which is probably caused by a parasite in the left postero-lateral region of the carapace.

The cephalothorax of *Carpil. tristis* is a little more enlarged than that of the other species. The interregional grooves are somewhat more distinct; therefore the urogastric areola 4 M is already visible to the naked eye, which is not the case in *Carpil. laevis*. The posterior of the two grooves which border the third lobe of the antero-lateral margins, is considerably longer in *Carpil. tristis*, so that an imaginary line, which unites the extremities of these grooves, coincides with the posterior border of the areola urogastrica. The whole upper surface of the cephalothorax of *tristis* proves to be very minutely granulated when examined under a strong magnifying-glass, but when *Carpil. laevis* is observed under the same lens, this minute granulation is only seen on the front and close to the antero-lateral margins.

The legs of *Carpil. tristis* are shorter in proportion to the width of the cephalothorax, and the ambulatory legs especially have a less slender form. Thus e. g. the last pair of legs of *Carpil. laevis* are about as long as the breadth of the cephalothorax, measured at the incisions between the second and the third lobe of the antero-lateral margins; the posterior legs of *Carpil. tristis* are, however, much shorter than that distance.

The dark brown colour of the fingers of Dana's species extends for a short distance along the lower margin of the hand; this is not the case with the specimen of *Carpil. laevis* which lies before me, but the specimen figured by Milne Edwards (Nouvelles Archives du Muséum, T. IX, Pl. 5, fig. 3a) presents the same character.

The breadth of the cephalothorax is $15\frac{2}{3}$ mm., its length 9 mm. These measurements are for *Carpil. laevis* respectively $16\frac{1}{2}$ mm. and 10 mm.

Heller (Novara-Reise) likewise records *Carpil. tristis* from Tahiti, and according to Milne Edwards this species is rather common on the shores of New Caledonia.

2. *Actaeodes Richtersii* de Man.

Actaeodes Richtersii, de Man, in: Zoologische Jahrbücher, herausgegeben von J. W. Spengel, Abth. f. Systematik, Bd. IV, S. 412, Taf. 9, fig. 2. 1888.

An adult female and a very young male from Tahiti.

Both specimens agree entirely with the original description founded upon an adult male, but the hands of the female differ somewhat in form from those of the male. The hands are namely somewhat shorter and more slender; they are a little more than three times as long as high, whereas in the adult male the height of the palm measures a little more than a third of the length. As regards the proportion between the horizontal length of the palm and that of the fingers, the female agrees with the male, but the palm is distinctly more than once and a half as long as high. The inner margins of both fingers are entire and excavated for some distance at the distal end; that entire, untoothed part of the margin is slightly longer than half the length of the margin in the immobile finger, slightly shorter than half the length of the margin in the dactylus; as regards the number and the form of the teeth, the female agrees with the male. The hiatus between the fingers when closed is slightly larger than in the male.

In the young male individual the lead-coloured tint of the index does not yet cover the distal part of the palm, which is the case in the adult male.

Dimensions of the female:

Distance between the external orbital angles	11 $\frac{1}{5}$ mm.
Greatest width of the cephalothorax . . .	29 $\frac{1}{4}$ »
Length of the cephalothorax	15 $\frac{2}{5}$ »
Length of the hand	13 $\frac{1}{3}$ »
Height of the palm	4 $\frac{1}{6}$ »

3. *Xantho punctatus* H. Milne Edw.

(Pl. 3, fig. 1).

Xantho punctatus, H. Milne Edwards; A. Milne Edwards, Nouvelles Archives du Muséum, T. IX, p. 199, Pl. VII, fig. 6. — de Man, in: Archiv f. Naturgeschichte, Jahrg. 53, 1888, p. 238.

The collection contains two fine adult specimens, a male and a female, of which the locality is unknown.

The two chelipedes of the female have the same size and agree entirely with the figure published by Milne Edwards. In the male the right chelipede (fig. 1) is considerably larger than the left. The black colour of the fingers extends somewhat farther in the male than in the female, as may be seen when comparing my figure of the larger hand of the male with that of the hand of the female in the »Nouvelles Archives.»

Dimensions:	♂	♀
Greatest breadth of the cephalothorax	49 mm.	42 $\frac{2}{3}$ mm.
Length of the cephalothorax . . .	30 »	26 »
Distance between the external orbital angles	20 $\frac{1}{2}$ »	17 $\frac{1}{5}$ »
Length of the larger hand	40 $\frac{1}{2}$ »	
Height of the larger hand	16 $\frac{1}{2}$ »	

4. *Xantho (Lachnopus) tahitensis* de Man.

Xantho (Lachnopus) tahitensis, de Man, in: Zool. Jahrbücher, Abth. f. System. Bd. IV, 1888, S. 418, Taf. IX, fig. 4.

Notes from the Leyden Museum, Vol. XII.

A male and a young female from Tahiti.

The chelae of the female fully agree with those of the male; in both the right chela is the larger.

5. *Xantho nudipes* A. Milne Edw.

Confer: de Man, in: Zoolog. Jahrb. Bd. IV, 1888, p. 420.

A young male and a female, which are of the same size.

The female is ova-bearing. The whole upper surface of the cephalothorax presents the small impressions and grooves that are characteristic to this species, whereas, according to Milne Edwards, only the anterior part should be covered with them. In the male the right chelipede is the larger, in the female the left. The extremities of the fingers are scarcely excavate.

Dimensions:	♂	♀
Greatest width of the cephalothorax	21 ¹ / ₂ mm.	20 ³ / ₄ mm.
Length of the cephalothorax . . .	14 ¹ / ₄ "	13 ³ / ₄ "
Distance between the external orbital angles	9 "	8 ³ / ₄ "

6. *Lophozozymus superbus* A. Milne Edw. (nec Dana).

Lophozozymus superbus, A. Milne Edwards, Nouvelles Archives du Muséum, T. IX, p. 205. — de Man, in: Archiv f. Naturgeschichte, Jahrg. 53, 1888, p. 269, Taf. X, Fig. 3b.

One male and an ova-bearing female from Upolu.

I have already said (l. c.) that *Lophozozymus superbus* A. Milne Edwards is a species different from *Lophozozymus superbus* Dana, the latter being identical with *Lophozozymus incisus* M. Edw. The cephalothorax of *Loph. superbus* A. Milne Edw. attains a breadth of 55 mm.; our two individuals from Upolu have, however, only half that size, though the female is already provided with eggs. The chelae of the female are equal in size, the upper margin of the palm is slightly and obtusely carinated along its proximal half and the fingers are slightly grooved in a longitudinal

direction. The black colour of the fingers extends a little on the base of the immobile finger in the male, but not in the female.

The upper surface of the cephalothorax is beautifully marbled with red on a paler ground-colour and the under surface presents numerous small round, reddish spots.

Dimensions of the female:

Breadth of the cephalothorax	27	mm.
Length " " "	16	"
Distance between the external orbital angles	13 ¹ / ₄	"

This species has also been recorded from New Caledonia.

7. *Leptodius gracilis* Dana.

Chlorodius gracilis, Dana, l. c. p. 210, Pl. XI, fig. 13.

Leptodius gracilis, de Man, in: Archiv f. Naturgeschichte, Jahrg. 53, 1888, S. 287, Pl. XI, fig. 2.

Two young male specimens from Ponapé.

Quite as was the case with the male from the Java Sea, described by me (l. c.), also in these two individuals the cephalothorax is slightly more enlarged than in the typical specimens of *Leptodius exaratus*, in which the fingers of the hands have no hiatus between them, when closed. I therefore think *Leptodius gracilis* to be a »good» species. The upper surface of the cephalothorax is shining, what is denied by Dana.

The dimensions of the larger specimen are as follows:

Width of the cephalothorax	18	mm.
Length " " "	11	"

8. *Chlorodopsis areolata* H. Milne Edw.

Chlorodopsis areolatus, A. Milne Edwards, Nouvelles Archives du Muséum, T. IX, p. 231, Pl. VIII, fig. 8.

A young male from the Fiji islands.

In this species all the regions of the upper surface are very distinctly developed and separated from one another

by deep grooves. The regions 2 M are each divided by a distinct groove in two secondary areolae, the mesogastric areola 3 M is tripartite and separated moreover from the areola 4 M. The areola cardiaca 1 P is separated by rather deep grooves from the areolae 3 R and 2 P; the anterior margin of this areola 1 P presents a narrow emargination in the middle, but this groove does not extend to the posterior margin, so that the two halves of this lobule are united with one another posteriorly. The short close down, that presents the upper surface of the cephalothorax, does not cover the small rounded granules, which are found on the areolae. Sternum and abdomen are somewhat punctate, but appear for the rest nearly smooth.

The right chelipede is a little larger than the left. The wrist is armed with a rather acute tooth at the internal angle of the upper surface and with a very acute spine below that tooth at the inner angle of the under surface. The hands are covered above and externally with numerous conical, rather acute tubercles, that are arranged more or less in transverse series. The lower margin of the hand is rounded and smooth. The fingers are sulcate. The upper margin of the dactylus presents two rows of acute tubercles until the middle; some small tubercles are also found on the index, a transverse row of tubercles of the palm extending on the immobile finger. The inner margin of the index presents three conical teeth, that of the dactylus also three, of which the proximal one is the largest.

The ambulatory legs are covered with the same close down as the upper surface of the carapace and are moreover densely hairy on the margins; the mero-, carpo- and propodites are armed with small sharp spines on their anterior margins.

The cephalothorax is $11\frac{2}{5}$ mm. broad and $7\frac{4}{5}$ mm. long.

This species inhabits the seas of Australia, New Caledonia and the Fiji islands.

9. *Heteropanope serratifrons* Kinahan.

(Pl. 3, fig. 2).

Ozius? serratifrons, Kinahan, The Journal of the Royal Dublin Society, Vol. I, 1856, p. 118, Pl. IV, fig. 1.

Pilumnopus serratifrons, Haswell, Catalogue of the Australian Stalk- and Sessile-eyed Crustacea, 1882, p. 70, Pl. II, fig. 1.

One young male, bearing a *Sacculina*, from the Pacific Ocean.

This species somewhat resembles *Heteropanope indica* de Man from the Mergui Archipelago, but differs by the following characters. The upper surface of the cephalothorax of *Heterop. serratifrons* is a little convex, especially anteriorly, that of *Heterop. indica* rather depressed. (I may observe that Kinahan describes the cephalothorax as »slightly depressed”, Haswell however as »very convex, both in the transverse and the antero-posterior direction”!) The cephalothorax is also a little less enlarged in proportion to the length as that of *Heterop. indica*. The front is a little broader than in the Mergui species, the distance between the internal orbital angles being somewhat longer than the third part of the greatest width of the cephalothorax. Kinahan says in his latin diagnosis, that the postero-lateral margins are nearly twice as long as the antero-lateral (margine postero-laterali contractâ, quam margine ant. lat. fere bis longiore), and afterwards he says that the antero-lateral margin scarcely attains the edge of the genital region. In our specimen, which is evidently a young one, the antero-lateral margins are somewhat shorter than the postero-lateral, their length being about in proportion as 5:7. The antero-lateral margins are armed with four teeth, the first of which forms the little prominent external orbital angle. This first lobe is nearly straight or very slightly emarginate and has nearly the same form as in *Heterop. indica*; the second lobe is considerably longer than the

first and obtusely rounded anteriorly. The second antero-lateral lobe of *Heterop. indica* on the contrary is a little narrower than the first. The two posterior teeth are much smaller, triangular, tooth-like and subacute; the third tooth is a little larger than the fourth.

The anterior half of the upper surface of the cephalothorax presents the same transverse, minutely granulated, pubescent lines as that of *Heterop. indica*. Immediately below the first antero-lateral lobe, the subhepatic region presents some more or less prominent granules; Kinahan describes them in the adult as »a small spine”, Haswell as a »tubercular eminence.” The flagellum of the outer antennae is longer than that of *Heterop. indica* and but little shorter than half the breadth of the cephalothorax. The abdomen does not fully agree with Kinahan’s figure, the joints appear comparatively a little broader; the penultimate joint is distinctly broader than long, that of *Heterop. indica* nearly quadrate.

The left chelipede is the larger one. The upper margin of the arm has an acute tooth immediately before the distal end. The wrist presents an acute tooth at its internal angle and the upper surface is somewhat granular. The larger hand (fig. 2) is a little more than once and a half as long as high, and the horizontal length of the fingers is but little more than half the horizontal length of the palm. The hand is minutely granulate on its upper margin and close to the articulation with the wrist, though in our young specimen the granules are only visible by means of the magnifying glass. The outer surface of the hand appears smooth for the naked eye, and very minutely granular under a strong lens. The dactylus is short, curved and somewhat granular at the base; this finger is not grooved, but presents two or three rows of impressed points. The immobile finger is distinctly sulcate on its outer surface, and armed with two or three teeth; the dactylus presents also three teeth, of which the two proximal ones are smaller than the opposite teeth of the index. The lower margin of

the palm is in a straight line with the lower margin of the immobile finger.

The fingers of the smaller hand are comparatively a little longer and the impressed points on the dactylus are deeper, the upper forming partly a groove; the upper and the posterior margin of the palm and the lower part of the outer surface are granular, and still much smaller granules are observed, by means of a strong magnifying-glass, on the rest of the outer surface. The fingers have pointed tips.

The hairy ambulatory legs are rather much compressed and resemble those of *Heterop. indica*, but the dactylopodites are still somewhat longer and are distinctly longer than the propodites.

Heteropanope australiensis Stimpson has five antero-lateral teeth and cannot therefore be identical with our species, as Haswell thought.

It is impossible to decide whether *Pilumnopus crassimanus* A. Milne Edw. from Port Western is identical with Kinahan's species, because the description is too short.

The upper surface of the cephalothorax is of a dark brown olive-green colour, the antero-lateral margins, the orbital margins and the frontal lobes are yellowish red, and the upper surface seems to be marked with a few reddish spots, as e. g. at the two fissures of the upper orbital margin. The upper sides of the anterior legs and the ambulatory legs have nearly the same colour; the outer surface of the hands is of a pale reddish, and the fingers are dark brown, the brown colour gradually growing paler towards the tips.

♂

Greatest width of the cephalothorax $15\frac{2}{3}$ mm.

Length of the cephalothorax, without the frontal

lobes $11\frac{2}{3}$ »

Length of the cephalothorax, with the frontal

lobes 12 »

Distance between the internal orbital angles . 6 »

Length of the larger hand, fingers included . $11\frac{1}{2}$ »

Length of the palm $7\frac{1}{2}$ mm.
 Height of the palm near the articulation with the
 fingers 7 »

In adult specimens the cephalothorax has a breadth of $1\frac{1}{4}$ inch and is then twice as large as our individual.

Heteropanope serratifrons Kinahan inhabits the eastern coast of Australia and New Zealand.

10. *Pilumnus globosus* Dana.

(Pl. 3, fig. 3).

Pilumnus globosus, Dana, l. c. p. 236, Pl. XIII, fig. 10.

Two specimens (♂ and ♀) of which the locality is unknown.

The cephalothorax of this species is rather thick, and, being but little broader than long, greatly resembles the species of the genus *Actumnus*. The upper surface is very convex in the antero-posterior direction; the regions are very faintly indicated and the sutures defining the gastric region are scarcely visible. The upper surface is covered with a few scattered, small granules and densely with rather short yellowish hairs. The front is very narrow, the distance between the internal angles of the orbits measures scarcely a third of the greatest width of the cephalothorax. It is much deflexed, prominent and divided in two lobes by a narrow but deep incision. The finely granulated and straight margins of these two frontal lobes run obliquely backward and are not separated by an incision from the upper orbital margins, quite as in the genus *Sphaerozius* Stimps. The external orbital angle is formed by a small rather acute granule, the inferior orbital margin presents some similar granules and the internal angle of the latter terminates in a somewhat larger granule. The basal joint of the outer antennae is very short and even the second joint does not yet reach the frontal margin; the length of the flagellum is still a little shorter than the breadth of the front. The antero-lateral margins are a little longer than the postero-lateral ones; they are entire, and orna-

mented, behind the external orbital angles, anteriorly with three small granules, placed at some distance from one another. The postero-lateral margins are slightly concave. The pterygostomian regions are smooth: a few granules are only observed quite near the inferior orbital margins. The endostome is distinctly ridged. Sternum and abdomen are punctate, but for the rest smooth; the penultimate joint of the abdomen in the male is somewhat broader than long.

The anterior legs are unequal both in the male and in the female. The larger hand (fig. 3) is very thick and its outer surface very convex; the latter is covered everywhere, as well on the upper as on the lower margin, with numerous granules, which are not arranged in transverse series, but irregularly. These granules are rather sharp close to the articulation with the wrist, but they become gradually more numerous, smaller and more obtuse towards the fingers. The fingers are short, smooth and not grooved; a few very small granules are only seen quite at the base of the dactylus, when observed under a magnifying-glass, and these granules are placed in a transverse row.

The granules, with which the smaller hand is covered, are less numerous, larger, conical, acute and more or less arranged in transverse rows. The dactylus is somewhat hairy at the base and presents here two or three longitudinal rows of acute granules; similar granules are also found at the outer surface of the immobile finger, which is slightly grooved. The larger hand is only slightly hairy on the proximal half of its outer surface, but the outer surface of the smaller hand is hairy until the base of the fingers. The fingers are black, with white pointed tips; each of them is armed with two or three white teeth.

The dimensions of the female are follows:

Greatest width of the cephalothorax . . .	16	mm.
Length of the cephalothorax	$13\frac{1}{3}$	"
Distance between the internal orbital angles .	$4\frac{2}{3}$	"
" " " external " "	$10\frac{1}{4}$	"

This species is most closely allied to *Pilumnus actumnoides* A. Milne Edw., which inhabits New Caledonia, but in this form the frontorbital margin of the upper surface of the carapace is comparatively broader, according to the figure published by Milne Edwards, the small teeth of the antero-lateral margins are more numerous and more prominent, and the outer surface of the larger hand is covered with less numerous granules. The dactylus of *Pilumnus actumnoides* seems to be also a little more granulate above.

Pilumnus globosus was discovered by Dana at the island of Tahiti and at some other islands of the Pacific Ocean, and was observed by the Challenger Expedition in the Japanese Seas.

11. *Pilumnus tahitensis*, n. sp.

(Pl. 3, fig. 4).

Two specimens (♂ and ♀) from Tahiti.

This very interesting new species may at first sight be distinguished from its numerous congeners by the fingers of the chelipedes which have exactly the same structure as those of *Pilumnus cristimanus* A. Milne Edw., and by the antero-lateral margins of the carapace being armed with the typical number of acute spines, just as in the typical forms of the genus.

The cephalothorax is a little broader than long. Its upper surface is rather depressed, only declivous towards the front and slightly so towards the antero-lateral margins. The regions are not or very faintly indicated; the upper surface appears smooth and shining between the scattered tufts of hair, but slightly uneven, though scarcely distinguishable, at the insertion of every tuft of hairs. The hairs, with which the upper surface is covered, are partly long, silken and pale yellowish, partly pinnate. They arise in transverse rows on the front at some distance from the margin. The front is rather prominent, less broad than half the breadth of the cephalothorax,

and divided by a triangular notch in two lobes which are directed somewhat obliquely backward. The margins of the frontal lobes are nearly straight, scarcely a little sinuous, and are not separated by any incision from the obtuse internal orbital angles. The frontal margins are smooth and not granular, quite as the upper surface of the cephalothorax. The orbits are large and slightly broader than half the width of the front. The eye-peduncles are hairy.

The upper margin of the orbits is not granulate, but hairy; the external angle is formed by a triangular, acute and rather prominent tooth, close to which the upper margin presents still a much smaller, triangular lobe. The acute tooth at the extraorbital angle is separated by a deep, triangular hiatus from the lower margin of the orbits; this hiatus is a little broader in the female than in the male.

The external half of the inferior margin of the orbits is entire, the internal angle dentiform, acute, hairy and rather prominent (fig. 4a) and two or three much smaller teeth are observed between the internal tooth and the external half of the lower margin. The interior hiatus of the orbits is rather wide and spacious; the basal joint of the antennal peduncle is considerably shorter than the internal suborbital tooth and does by far not reach the front. The second joint reaches to the upper surface of the front and the third joint is almost as long as the second. The flagellum is glabrous and as long as the breadth of the front.

The antero-lateral margins are distinctly shorter than the postero-lateral. They are armed with three very acute spiniform teeth, which are equally distant from one another as from the dentiform external orbital angle. The subhepatic region bears several small and acute tubercles, one of which is larger than the others and dentiform (fig. 4a). The pterygostomian regions are somewhat granular. The endostome is distinctly ridged. The merus-joint of the outer foot-jaws is quadrangular, its anterior margin straight or scarcely concave and the external angle obtusely rounded.

The penultimate joint of the male abdomen is somewhat broader than long. The sternum and abdomen are slightly pubescent.

With the exception of the fingers and of the inner surface of the hands, the anterior legs are covered with hairs which are partly long, silken and yellowish, partly pinnate and which resemble those, found on the upper surface of the cephalothorax. In the male the right chelipede is a little larger than the left; unfortunately the female specimen has lost the right leg, so that I cannot say whether they are equal or not. The upper margin of the arms bears two sharp spiniform teeth, one at the distal end, the second a little before it; a small spiniform tooth is also observed at the proximal end of the anterior margin. A sharp conical granule is found at the internal angle of the wrist and a few similar conical and acute granules are dispersed on the upper surface which is covered with long hairs.

The fingers of the larger hand (fig. 4b) are about as long as the palm, those of the smaller hand distinctly longer. The palm is covered above and externally with rather long hairs and between these hairs with a few sharp conical granules, which resemble those of the upper surface of the wrist; these granules decrease in size towards the inferior margin.

The fingers present exactly the same form and structure as those of *Pilumnus cristimanus*; the crests on the outer surface of the fingers are however less acute and more obtuse, and the sharp inner edge of the immobile finger, which is quite entire in *Pilumnus cristimanus*, presents, at least in the male, four or five very small incisions. The fingers are smooth all over, and present no trace of granulation, even at the base of the dactylus, but at the uncoloured base of the latter a few long hairs are implanted.

The ambulatory legs, which are covered with long hairs, are comparatively long and their propodites are nearly as

long as the dactylopodites; the upper margins of the meropodites and of the carpopodites are armed with a spiniform tooth at the distal end. The hairs which are found on these legs are also partly pinnate.

Pilumnus tahitensis is closely allied to *Pilumnus vestitus* Haswell from Port Jackson (vide Miers, Challenger Expedition, Brachyura, p. 159, Pl. XIV, fig. 3), but is distinguished at first sight by the remarkable structure of the fingers.

Dimensions:	♂	♀
Breadth of the cephalothorax, lateral teeth included	$10\frac{2}{3}$ mm.	10 mm.
Length of the cephalothorax	$7\frac{2}{3}$ »	$7\frac{1}{2}$ »
Distance between the external orbital angles	$7\frac{1}{2}$ »	$7\frac{2}{5}$ »

12. *Trapezia guttata* Rüpp. (Heller).

Trapezia guttata Rüppel, Heller, in: Sitzungsber. Kais. Acad. der Wissensch. in Wien, Bd. XLIII, p. 351.

Trapezia guttata, Miers, Report on the Challenger Brachyura, 1886, p. 166, Pl. XII, fig. 1.

Two specimens, male and female, from Samoa.

Quite as in the specimens described (l. c.) by Miers, also in our specimens the ambulatory legs alone are marked with small red spots. The cephalothorax is a little broader in proportion to the length than that of *Trapezia cymodoce* Herbst.

Our species is also distinguished by the frontal teeth being but little developed and by the glabrous outer surface of the hands.

The lateral teeth of the cephalothorax are sharp and acute as in *Trap. cymodoce*; the hands are much compressed and their upper margin is rather sharp, not rounded.

Dimensions:	♂	♀
Breadth of the cephalothorax, distance between the lateral teeth	$12\frac{3}{4}$ mm.	$12\frac{2}{3}$ mm.
Length of the cephalothorax	$10\frac{1}{4}$ »	$9\frac{3}{4}$ »

13. *Trapezia flavopunctata* Eyd. & Soul.

Trapezia flavopunctata, Eydoux & Souleyet, Voyage de la Bonite, Tome I, p. 230, Pl. 2, fig. 3.

Trapezia latifrons, A. Milne Edwards, Nouvelles Archives du Muséum, Tome IX, p. 259, Pl. X, fig. 7.

Three adult specimens (2 ♂ and 1 ♀) from Tahiti and two very young males the locality of which is unknown.

The two young males certainly belong to *Trap. latifrons* A. Milne Edw. and agree completely with the description and the figure of that species. They differ from the three adult individuals almost only by having the areolae of the reticulate pattern on the cephalothorax larger and less numerous. This species may be distinguished at first sight from *Trap. areolata* Dana: 1° by the general shape of the cephalothorax, 2° by the granulate lower margin of the hands, and 3° by the areolae. In *Trap. areolata* Dana the areolae are much smaller and much more numerous and do not exist on the ambulatory legs. The lateral teeth of the cephalothorax are less sharp in the adult than in the young, and this is also the case with the acute tooth at the internal angle of the wrist of the anterior legs. In adult specimens the upper-, as well as the lower surface of the cephalothorax is marked with a net of areolae, which are a little larger than those of *Trap. areolata*; these areolae are also seen on both sides of the anterior legs. Spot-like red transverse bands exist on the ambulatory legs, two or three on the meropodites, and one on the carpo- and propodites.

I finally may observe that this species differs from *Trap. rufopunctata* Herbst exclusively by the pattern, showing in any other respect the most complete resemblance with it.

The largest specimen, a female, has the following dimensions:

Distance between the external orbital angles $20\frac{1}{4}$ mm.

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Length of the cephalothorax	17	mm.
Breadth of the front, measured between the eyes	13	»

In the smallest specimen, a male, the measurements are as follows:

Distance between the external orbital angles . .	11	mm.
Length of the cephalothorax	$8\frac{1}{4}$	»
Breadth of the front, measured between the eyes	$6\frac{1}{5}$	»

14. *Eriphia scabricula* Dana.

Eriphia scabricula, Dana, l. c. Tome I, p. 247, pl. XIV, fig. 5.

A female and a younger male from unknown locality.

I have before me a young male of *Eriphia laevimana*, var. *Smithii*, collected in the Javan Sea, which I have described some time ago (Archiv f. Naturgeschichte, Bd. 53, 1888, p. 327), so that I am enabled to point out the slight differences existing between this form and *Eriphia scabricula*. The cephalothorax of Dana's species is slightly more enlarged. The post-frontal lobes 2 F are not separated in this species from the regions 1 M by a transverse groove, but form one single region with the latter and the regions 2 M; in *Eriphia laevimana* the post-frontal lobes 2 F are on the contrary separated from the areolae 1 M by distinct smooth transverse grooves. These areolae 2 F and 1 M are more finely granulated in *scabricula* than in the other form. The median incision of the front is slightly wider, and the anterior margins of the two arcuate frontal lobes are not or only very finely granulated, but very distinctly so in *Eriphia laevimana*. The granulation on the outer surface of the hands is somewhat closer and finer in *Eriphia scabricula*, and the upper surface of the cephalothorax and the hands are always hairy in the species described by Dana.

The largest specimen, the female, has the following dimensions:

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Breadth of the cephalothorax 19 mm.

Length » » » $12\frac{3}{4}$ »

Breadth of the front . . . $9\frac{3}{4}$ »

These measurements are in the male of *Eriphia laevimana*, var. *Smithii*, respectively 18 mm., $12\frac{3}{4}$ mm. and 9 mm.

15. *Goniocaphyra truncatifrons* de Man.

Goniocaphyra truncatifrons, de Man, in: Archiv f. Naturgeschichte, 1888, Bd. 53, p. 339, Pl. XIV, fig. 1.

This species is identical with *Catoptrus nitidus* A. Milne Edw.

At the time when I described the *Goniocaphyra*, I supposed *Catoptrus nitidus* to be a quite different form, especially because I was led to the opinion that the *Goniocaphyra* ought to be referred to the Portunidae on account of its presumptive affinities with the genus *Caphyra* Guérin.

Prof. Milne Edwards kindly sent me his own drawing of *Catoptrus nitidus*, which has never been published as far as I am aware. The cephalothorax attains in the adult specimens a breadth of 23 mm., the original specimen of *Goniocaphyra* has not yet half that size. In the adult male the hands, especially the larger one, seem to present a somewhat different form as in the younger male and in the female. This observation is the result of a comparison of the drawing of Milne Edwards with my own figures and a female specimen from the Pacific Ocean, which I have before me. The cephalothorax of this latter specimen is 12 mm. broad. According to the drawing of Prof. Milne Edwards, the fingers of the larger hand of the adult male are little more than half as long as the palm, whereas they are exactly as long as the palm in the young male specimen I have described. The fingers should be, moreover, comparatively higher and less slender in the adult male than in the young and in the female.

Catoptrus nitidus A. Milne Edw. has been recorded from the Javan Sea and from the Samoa Islands.

16. *Xenophthalmodes Moebii* Richters.

(Pl. 3, fig. 5).

Xenophthalmodes Moebii, Richters, Beiträge zur Meeresfauna der Insel Mauritius und der Seychellen, 1880, p. 155, Pl. XVI, fig. 28, Pl. XVII, fig. 1—5.

A single male from the Red Sea, collected by Mr. J. A. Krøyt at Djeddah.

On this interesting form the following may be remarked.

According to Mr. Richters the corneae of the eyes should be entirely obliterated in this species, which therefore should be perfectly blind. In the Djeddah specimen, however, I observe an extremely small, punctiform, dark-coloured cornea (fig. 5), placed near the external extremity of the lower margin of the orbits; this minute cornea may best be seen when light falls in an oblique direction upon it and then it appears, under a magnifying-glass, as a black point. Richters does not say much about the external foot-jaws, but in his figure 5 the anterior and the external margins of the merus-joint seem to make together a continuous arcuate line. In our specimen, however, the merus-joint (fig. 5a) is distinctly quadrangular, the anterior margin nearly straight or very slightly arcuate, a little oblique and somewhat longer than the external margin; there is a distinct angle between the two margins, and the palp is inserted at the antero-internal angle of the joint.

A third difference finally presents the abdomen (fig. 5b), the third, fourth, fifth and sixth joints of which are somewhat shorter and appear therefore more enlarged than in the figure given by Richters; the terminal joint is a little longer, than it is broad at the base.

For the rest our specimen agrees perfectly well with all what Richters says and figures, and I therefore suppose our specimen to belong to the same species.

The whole animal is of a pale grayish colour and the upper margin of the mobile finger of a porcelain-white.

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The cephalothorax is, posteriorly, 11 mm. broad and $8\frac{1}{5}$ mm. long. The specimen of Richters had about the same size.

17. *Geryon trispinosus* Herbst.

(Pl. 4, fig. 6).

Cancer trispinosus, Herbst, Krabben und Krebse, Bd. III, Heft 3, p. 43, Pl. LVII, fig. 4 (1803).

Chulaepus trispinosus, Gerstaecker, Carcinologische Beiträge, in: Archiv f. Naturgeschichte, Jahrg. XXII, 1856, p. 119.

The Leyden Museum Collection contains one single male specimen of this rare and interesting crab, of which, as far as I know, only one other specimen exists, viz. the original specimen of Herbst's *Cancer trispinosus* in the Royal Museum of Berlin. Unfortunately the origin of the Leyden Museum crab is quite unknown. Herbst indicates the East-Indies as the habitat of his *Cancer trispinosus*. The other species of the genus *Geryon* occur in the European seas and in the Atlantic Ocean: all are deep-sea forms. It appears, for that reason, very probable to me that *Geryon trispinosus* Herbst represents this genus in the depths of the indo-pacific seas, and that therefore only two specimens have been collected until to day.

Gerstaecker created for this species the genus *Chalaepus*, but it is without any doubt a true representative of the genus *Geryon*, established by Kröyer in 1837. Three species of this genus were known up to this date, if we exclude *Geryon incertus* Miers from the Bermudas, the true place of which is still uncertain: they are *Geryon tridens* Kröyer from the northern European seas, *Geryon quinquedens* Smith from the East Coast of the United States, and *Geryon longipes* A. Milne Edw. from the Mediterranean and North Spanish coasts.

I have to express my thanks to Dr. Hilgendorf of Berlin, from whom I have received most valuable informations regarding the specimen of Herbst. The latter presents some slight differences, which are either individual or must be

attributed to the somewhat larger size of the crab of the Berlin Museum.

The cephalothorax (fig. 6) is hexagonal, moderately convex in the antero-posterior, and slightly so in the transverse direction. Only a part of the regions are indicated. The posterior half of the mesogastric and the anterior half of the cardiac region are defined laterally by shallow grooves, but there is no transverse groove between these two regions. The cardiac region is separated posteriorly from the branchial regions by somewhat erose and uneven shallow impressions, which separate it also from the intestinal region. On each side of the mesogastric region a short impressed line is seen anteriorly, with a punctiform impression at the internal extremity of each line. A shallow depression, bearing two verrucous eminences, separates the hepatic from the branchial regions and the latter are somewhat erose and uneven in the middle. The anterior declivous part of the upper surface presents no interregional grooves at all. The upper surface is smooth and glabrous, though it is rather irregularly punctate and marked with numerous shallow and small impressions, which give it here and there an erose appearance.

The cephalothorax is a little broader than long, and the proportion of the distance between the third antero-lateral teeth and the length is about as 4:3. The front is obliquely directed downward and measures about a fifth of the distance between the posterior antero-lateral teeth. Its rather sharp anterior margin terminates in four small obtuse teeth, the external of which forms the internal angles of the orbits; the median teeth are placed close together and project a little more forward than the external ones. These frontal teeth are a little more prominent in the specimen of Herbst than in that of Leyden. The front is flattened and smooth, and presents no trace of a frontal furrow. The breadth of the front between the tips of the external teeth is a little larger than the width of the orbits between their inner and outer angles.

The upper orbital margin presents traces of two fissures, but appears for the rest entire. The outer angles of the orbits are dentiform and acute, and project a little less forward than the external frontal teeth.

The antero-lateral margins (fig. 6*b*) are shorter than the postero-lateral ones and measure only two thirds of the latter. They are armed behind the dentiform, external orbital angles, with two acute teeth, of which the posterior one is somewhat larger than the other. This third or last tooth is comparatively a little longer and larger in the specimen of Herbst than in our somewhat younger individual. The first antero-lateral, i. e. the extraorbital tooth, is somewhat flattened above, the two posterior ones slightly convex. The distance between the tips of the first and the second antero-lateral teeth is but little smaller than the distance between the second and the third. The lateral margin of the cephalothorax appears very slightly convex between the first and the second as well as between the second and the third antero-lateral teeth. In the original specimen of Herbst the lateral margin is quite straight between the first and the second teeth, slightly convex between the second and third; in this specimen the anterior margin of the third tooth forms almost a right angle with the lateral margin, in our specimen, however, a concave arcuate line. The postero-lateral margin is obtusely carinate anteriorly, but this obtuse carina disappears backward and the posterior margin of the cephalothorax is almost as broad as the distance between the second antero-lateral teeth. The lower margin of the orbits (fig. 6*a*) is concave and entire, and terminates in an acute prominent tooth, which projects about as much forward as the external frontal teeth. The eyes, antennulae, antennae and epistome are very much like in *Geryon tridens*. The second joint of the antennal peduncle is a little shorter than the basal joint and reaches almost to the upper surface of the front; the third joint measures about two thirds of the length of the

second. The endostome is distinctly ridged. The merus-joint of the outer foot-jaws (fig. 6c) is as long as it is broad at base; its anterior margin as well as the antero-external angle is rounded and the external margin very slightly concave. The penultimate joint of the palp is only a little shorter than the terminal joint, and the exognath reaches almost to the rounded antero-external angle of the merus-joint.

The pterygostomian regions, the sternum and the abdomen are smooth and glabrous. The sternum is almost as long as broad and the two anterior segments are coalescent. The abdomen of the male (fig. 6d) resembles that of *Geryon longipes* A. Milne Edw. as regards its outer form; it is seven-jointed, all the sutures being distinct, but the third, fourth and fifth segments seem to be coalescent and immobile. The two first segments cover the whole width of the sternum between the bases of the fifth ambulatory legs; they are less broad than the third segment, which is the broadest of all. The fourth, fifth and sixth segments are subequal in length, the lateral margins of the penultimate segment slightly convex. The form of the terminal segment differs a little in our specimen and in that of the Berlin Museum. In our specimen it is broadly triangular, the length measuring only two thirds of the breadth at base; the lateral margins are very slightly concave and the posterior margin occupies exactly the anterior margin of the penultimate segment. In the specimen of Berlin the terminal segment is comparatively less enlarged and more narrowed anteriorly, the lateral margins being more distinctly concave; the length measures four fifths of the breadth at base, and the posterior margin is a little shorter than the anterior margin of the penultimate segment.

The anterior legs are moderately robust and the right leg is a little larger than the left, as in the specimen of Herbst. The upper margin of the arms bears a very small spiniform tooth at some distance before the distal end;

the other margins are obtuse, rounded and unarmed. The upper surface of the wrist is somewhat uneven and presents a very acute spiniform tooth at the internal angle.

The larger hand is two and a half times as long as high and the fingers are a little shorter than the palm, which is about a third longer than high. The outer surface of the palm is slightly concave above in a longitudinal direction, rather convex in the middle and at the rounded under margin; the upper margin is rounded. The fingers are slightly compressed and have pointed crossed tips, the upper margin of the dactylus is arcuate, rounded and smooth; the inner margin is armed with ten or twelve teeth, of which the proximal one is somewhat larger than the others. The inner margin of the immobile finger presents nearly the same number of teeth, which also decrease in size towards the tip of the finger.

The smaller hand resembles the larger, but the fingers are slightly longer than the palm. The anterior legs are smooth and glabrous.

The ambulatory legs are slender and elongate. The legs of the third and fourth pair are equal in length and longer than those of the two other pairs; the second pair is the shortest of all. Gerstaecker's description is inexact, when he says that the meropodites of the fourth and fifth legs have almost the same length and that the meropodite of the third pair is the longest of all. The mero-, carpo- and propodites are strongly compressed laterally; the slightly arcuate upper margin of the meropodites ends at the distal end in a small sharp tooth. The carpopodites and the propodites of the four pairs of ambulatory legs present, with regard to their length, the same proportions as the meropodites. The very slightly arcuate dactylopodites are compressed laterally and also in the antero-posterior direction, and their upper or outer margin is slightly concave longitudinally. The ambulatory legs are apparently smooth and glabrous.

Our specimen, like that of Berlin, is of a pale bone-

colour; the figure of Herbst is too dark, as is already observed by Gerstaecker.

I give here the dimensions of the two specimens:

	Leyden. Berlin.	
Distance between the tips of the third antero-lateral teeth (= breadth of the cephalothorax)	90 mm.	99 mm.
Distance between the tips of the first antero-lateral teeth (extraorbital teeth)	50 $\frac{1}{2}$ »	51 $\frac{1}{2}$ »
Distance between the tips of the first and of the second antero-lateral teeth . .	15 »	15 »
Distance between the tips of the second and of the third antero-lateral teeth .	17 »	
Distance between the tips of the first and of the third antero-lateral teeth (= length of the antero-lateral margin)	31 »	
Length of the postero-lateral margin . .	44 »	
Length of the posterior margin of the cephalothorax	64 »	
Length of the cephalothorax, without the median frontal teeth	70 »	76 $\frac{1}{2}$ »
Distance between the tips of the inner sub-orbital tooth and the extraorbital tooth	12 »	11 »
Distance between the tips of the external frontal teeth (breadth of the front) . .	18 »	18 $\frac{1}{2}$ »
Length of the sternum	52 »	
Breadth of the sternum	48 »	
Length of the terminal segment of the male abdomen	7 $\frac{1}{2}$ »	8 »
Breadth at base of the terminal segment of the male abdomen	12 »	10 »
Length of the larger hand	69 »	
» » » palm of the larger hand	36 $\frac{1}{2}$ »	
Height » » » » » »	27 »	
Length of the meropodites of the first right pair of ambulatory legs . . .	49 »	50 »

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Leyden. Berlin.

Length of the meropodites of the second

right pair of ambulatory legs . . . 60 mm. 58 mm.

Length of the meropodites of the third

right pair of ambulatory legs . . . 61 » 58 »

Length of the meropodites of the fourth

right pair of ambulatory legs . . . 55 » 51½ »

As I already observed above, the two specimens do not fully agree with one another as regards the dimensions. Firstly in the Leyden specimen the distance between the extraorbital teeth is a little larger in proportion to the length of the cephalothorax and to the distance between the third antero-lateral teeth than in the specimen of Berlin. The ambulatory legs seem to be comparatively a little shorter in the specimen of Herbst than in that of Leyden and the meropodites of the last pair of legs are comparatively a little longer in proportion to those of the other legs in our specimen than in that of Herbst.

Dr. Hilgendorf adds that the meropodites of the left legs of the Berlin specimen are all together one millimetre shorter than those on the right side.

The four species of the genus *Geryon* may be distinguished as follows:

Lateral margins with five teeth. Front exactly as broad as the orbits *quinquedens* Smith.

Lateral margins tridentate. Front distinctly broader than the orbits.	{	Antero-lateral margins a little	
		shorter than the postero-lateral and concave between	
		the antero-lateral teeth .	<i>tridens</i> Kröyer.
	{	Antero-lateral margins	large:
		slightly convex between the	<i>longipes</i> A. M. Edw. ¹⁾
		antero-lateral teeth, which	small:
		are comparatively . . .	<i>trispinosus</i> Herbst.

1) Victor Carus (Prodromus Faunae Mediterraneae. Pars II, 1885, p. 522) quotes *Geryon longipes* as identical with *Geryon tridens*.

18. *Macrophthalmus crassipes* H. Milne Edw.

(Pl. 4, fig. 7—9).

Macrophthalmus crassipes, H. Milne Edwards, in: Annales Sciences Naturelles, T. XVIII, 1852, p. 157.

One male specimen from the Carolines.

I will remark the following about this rare form, which is only known by the short diagnosis of Milne Edwards. I have before me a type specimen (♂) of *Macr. crassipes* M. Edw., received from the Paris Museum, a type specimen (♂) of *Macr. dilatatus* de Haan from Japan, and several specimens (♂ and ♀) of *Macr. carinimanus* Latr., on which I have published some remarks ten years ago (Notes from the Leyden Museum, Vol. II, 1880, p. 69). In that note I have compared *Macr. carinimanus* Latr. with *Macr. dilatatus* de Haan and I now wish to indicate the differences between these two forms and *Macr. crassipes*.

The cephalothorax of *Macr. crassipes* most closely resembles that of *Macr. dilatatus*, as regards its general form, the granulation of the upper surface, and the number, form and direction of the antero-lateral teeth. I cannot, indeed, find any other difference than that the fissure between the external orbital angle or first antero-lateral tooth and the second tooth is a little narrower in *Macr. crassipes*.

The eye-peduncles of *Macr. crassipes* reach as far as the external orbital angle, but are a little shorter in the species of de Haan and do not reach the extremity of the first antero-lateral tooth. The interregional grooves are equally developed in both species, and the granulation of the upper surface is also quite the same, two granular tubercles being observed on the postero-lateral sides.

Both species fully agree with one another as regards the direction of the upper margin of the orbits, which is somewhat oblique, so that the extremity of the external orbital angle projects much less forward than the upper orbital margin.

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In both species the antero-lateral margins are armed with two teeth behind the acute external orbital angle, of which the anterior one is considerably larger than the third.

Macr. crassipes and *Macr. dilatatus* may be distinguished at first sight by the different structure of the hands of the male (and probably also of the hands of the female). The upper margin of the arms presents a few small sharp teeth in the middle, in both species, and in both forms the inner surface of the wrist is bispinose, bearing namely one acute tooth at the inner angle of the upper surface and the other at the inner angle of the under surface. The hands much resemble one another as regards their general form (fig. 7 and 9). The fingers are shorter than the palm and deflexed in both forms. The outer surface of the palm (fig. 7) appears nearly smooth for the naked eye in *Macr. crassipes*; a fine granulation however is observed covering the whole outer surface, when the latter is examined under a magnifying-glass, and these granules increase somewhat in size towards the articulation with the wrist. The upper margin of the palm is finely granulated.¹⁾ In *Macr. dilatatus* on the contrary the upper half of the outer surface of the palm (fig. 9) is strongly, though rather thinly, granulated, the granules are visible to the naked eye and they are separated by a transverse ridge of larger granules from the smooth and concave middle part of the outer surface; that concave part is bordered below by a granulated longitudinal ridge, which proceeds upon the immobile finger, and exists also in *Macr. crassipes*. The upper margin of the palm bears several prominent and sharp conical teeth in the species of de Haan. The

1) In our specimen from the Carolines (fig. 7a) the fingers are a little more deflexed and leave, when closed, a somewhat wider hiatus between them than in the Paris type specimen (fig. 7). This slight difference may perhaps be explained by the larger size of the Paris specimen.

upper margin of the mobile finger of *Macr. dilatatus* is straight and distinctly granulated; the inner margin has numerous very small teeth, but no large prominent one. The inner margin of the index presents also numerous very small teeth and no large one. In *Macr. crassipes* the dactylus is rather strongly arcuate and smooth, even at the upper margin; the inner margin presents some small teeth, of which one quite at the base is a little larger. The immobile finger is armed with a prominent tooth in the middle of its inner margin, the tip of which tooth descends obliquely to the proximal end of the finger and perpendicularly to the distal end. The inner surface of the palm is armed in both species with a spine and densely covered with hairs, like the inner surface of the fingers.

Macr. crassipes M. Edw. is also closely allied to *Macr. carinimanus* Latr. The cephalothorax of the latter differs from the cephalothorax of *Macr. crassipes* especially by the less oblique direction of the upper orbital margins, so that the external orbital angle, which is directed obliquely outward, projects as much forward as the upper orbital margin, which is not the case in *Macr. crassipes*. The incision which separates the external orbital angle or first antero-lateral tooth from the second, is much narrower in *Macr. crassipes* than in the other. Both species resemble one another as regards the granulation and the structure of the upper surface, and two granulated eminences are observed on the postero-lateral sides in both forms.

The hands of *Macr. carinimanus* (fig. 8) are however longer and more slender than those of *Macr. crassipes*, the palm being nearly four times as long as high in the former, but only about twice as long as high in the latter species. The proportion between the length of the palm and of the fingers is about the same in both forms. The outer surface of the palm is finely granular above and towards the articulation with the wrist, and presents below, near the lower margin, a strong

granulated crest, proceeding upon the immobile finger. The inner surface of the palm is armed with a spine in both species and hairy like the inner surface of the fingers. The latter are almost as strongly deflexed in *Macr. carinimanus* as in *Macr. crassipes* and agree much in both species; the basal tooth of the dactylus however is comparatively a little broader, and the tooth of the index comparatively a little smaller than in *Macr. crassipes*. The fingers of *Macr. crassipes* are also a little more slender and the dactylus is slightly more arcuate.

The dimensions of our specimen of *Macr. crassipes* are:
 Distance between the external orbital angles $22\frac{1}{2}$ mm.
 Length of the cephalothorax $10\frac{1}{4}$ »

The cephalothorax of the Paris specimen of *Macr. crassipes* is almost 15 mm. long.

The dimensions of two males of the two other species are as follows:

Macr. *Macr.*
carinimanus. *dilatatus.*

Distance between the external orbital
 angles. $21\frac{1}{2}$ mm. $26\frac{1}{2}$ mm.
 Length of the cephalothorax . . . $9\frac{1}{2}$ » $12\frac{3}{4}$ »

Macr. crassipes H. Milne Edw. has hitherto only been recorded from the coast of New Holland.

19. *Macrophthalmus pacificus* Dana.

(Pl. 4, fig. 10).

Macrophthalmus pacificus, Dana, l. c. p. 314, Pl. XIX, fig. 4.

Macrophthalmus bicarinatus, Heller, Novara-Reise, p. 36, Pl. IV, fig. 2.

The Leyden collection contains four specimens of which the locality is unfortunately unknown, one male and three females, none of which is provided with eggs. The latter fact is remarkable, because the original specimens, described by Dana and Heller, were of a still smaller size.

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The proportion of the greatest width of the cephalothorax to its length is in our specimens as 7 : 5. The upper surface is slightly convex longitudinally as well as transversely; the gastric region is defined posteriorly by the distinct cervical suture, but laterally by shallow depressions of the upper surface. Similar depressions border the anterior branchial area posteriorly and also for a part the cardiac region. The upper surface appears smooth and shining to the naked eye; when seen under a magnifying-glass of sufficient power, it appears however to be very minutely granular, especially on the branchial regions. The postero-lateral sides of the upper surface are marked with two minutely granulated, pubescent, longitudinal lines, which run parallel with each other, not far from the postero-lateral margins; a third, minutely granulated and pubescent, though much shorter line runs, on each side of the upper surface, in an oblique direction, close to and nearly parallel with the posterior margin of the cephalothorax, immediately above the insertion of the last pair of legs; finally, a fourth, somewhat arcuate line is seen immediately in front of the two described longitudinal lines, proceeding, for a short distance, transversely from the third tooth of the lateral margins. The front is obliquely deflexed and shows a longitudinal groove in the middle; it is rather narrow and its breadth measures not quite one sixth of the distance between the external orbital angles. The anterior margin of the front is very slightly arcuate. The lateral margins of the cephalothorax are sinuous, their anterior half being slightly convex, their posterior portion appearing slightly concave immediately behind the third lateral tooth. The anterior half of the lateral margins presents two incisions, the first of which is much larger and deeper than the second. The first antero-lateral lobe has an obtuse or sometimes even rounded external angle, which is the external one of the orbits, towards which the upper margin of the latter slightly rises upward. The second lobe of the lateral margins is almost twice as long as the

first, and projects more laterally, because, as I have said, the anterior half of the lateral margins runs slightly outward instead of inward. The third antero-lateral tooth is very small, acute and dentiform. The eye-peduncles measure about a third of the greatest width of the cephalothorax and scarcely reach to the external orbital angle. The inferior margin of the orbits is delicately crenulate both in the male and in the female.

The anterior legs of the male are of equal size. The upper margin and the external margin of the triquetrous arms are finely denticulate and the external surface is minutely granular. The under surface of the arms is thickly clothed with a patch of hair. The wrist has the upper surface smooth for the naked eye. The hands (fig. 10) are quite as long as the length of the cephalothorax and appear to be smooth, but their outer surface proves to be very minutely granular, when seen under a magnifying-glass of strong power. The upper margin as well as the under margin of the palm are obtuse, no longitudinal crest exists on the outer surface close to the under margin and the inner surface, which is unarmed, is thickly clothed with hair on its distal half and at the base of the fingers. The fingers measure almost two thirds of the length of the palm. The lower margin of the immobile finger forms a continuous straight line with the lower margin of the palm, the index being not at all deflexed. The outer surface of the immobile finger is flattened at the base and presents a minutely granulated, longitudinal line which proceeds near the lower margin to the end of the finger; the inner margin is armed with a row of fifteen or sixteen small teeth, of which three or four, which lie in the middle of the row, are a little larger than the others. The mobile finger appears also minutely granular, especially on the upper margin, under a magnifying-glass; the inner margin is, immediately before the middle, armed with a rather broad, prominent tooth, the inner margin of which presents six or seven denticles and just before

the horny, spoonlike excavated tip the inner margin of this finger is armed moreover with five or six very small teeth, which are smaller than the opposite teeth of the index. The excavated tips of the fingers have horny margins and are somewhat hairy.

The upper margin and the infero-internal margin of the arms of the anterior legs of the female are clothed with rather long hairs, but their under surface is quite glabrous, smooth, without a patch of hair. The inner margin of the wrist is also hairy. The hands measure scarcely two thirds of the length of the carapace, they are much smaller than those of the male and have a different form. The fingers are namely quite as long as the palm, the outer surface of which is minutely granular. The upper margin of the palm presents a longitudinal row of small granules; a granulated ridge proceeds on the outer surface of the palm close to and parallel with the under margin and is continued as a smooth ridge on the immobile finger to the tip. Immediately below this ridge the lower margin of the index is longitudinally sulcate. The upper margin of the dactylus is also longitudinally grooved. The outer surface of the fingers appears smooth, the dactylus has no denticulated lobe before the middle, but both fingers are armed with a few very small teeth, which are slightly more distinct on the lower than on the upper finger. The inner margins of the fingers are hairy along their distal half. The smooth inner surface of the palm does not present the patch of hair, which exists in the male.

The meropodites of the other legs are pubescent along their upper margin and armed with a spiniform tooth a little before the distal end; for the rest these legs have the form and structure, proper to allied species.

The two largest individuals have the following dimensions :

	♂	♀
Distance between the external orbital angles.	13 $\frac{1}{3}$ mm.	15 $\frac{2}{3}$ mm.

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Greatest width of the cephalothorax,
 immediately before the second in-
 cision 15 mm. $17\frac{1}{2}$ mm.
 Length of the cephalothorax . . . $10\frac{3}{4}$ » $12\frac{1}{2}$ »

Macrophthalmus bicarinatus Heller from the Nicobar Islands is, in my opinion, identical with *Macr. pacificus* Dana, the only difference being the presence of the two granulated lines on the postero-lateral sides of the upper surface of the cephalothorax, which are not described by Dana. We must, however, consider that Dana's specimen was very small and that a slight pubescence is distinctly seen on his figure 4 a, so that I suppose that the pubescent lines were indeed also present in the original specimen of the american author. Heller's figure of *Macr. bicarinatus* is bad; the cephalothorax being figured too narrow. Our species is most closely allied to *Macr. tomentosus* Eyd. & Soul. and I at first thought our specimens to be young individuals of that species of which an adult male from the Mergui Archipelago lies before me. The species of Eydoux and Souleyet presents indeed almost the same form of the cephalothorax, but nearly the whole upper surface is distinctly granulated, the immobile finger of the hands of the male is slightly deflexed and the inner margin of this finger is armed with a strong tooth a little before the middle, whereas the tooth of the dactylus is much smaller and placed close to the articulation.

20. *Myctiris longicarpus* Latr.

Myctiris longicarpus, Milne Edwards, in : Annales Sciences naturelles, Tome XVIII, 1852, p. 154.

Myctiris deflexifrons, de Haan, Fauna Japonica, Crustacea, p. 25 (sine descriptione).

Two specimens, locality unknown.

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The cephalothorax of the larger specimen has a length of 25 mm., so that this individual may be considered to be adult. The wrist of the anterior legs presents a longitudinal groove on its upper surface, which is situated close to the internal margin. The fingers are about twice as long as the horizontal length of the palm, the dactylus is armed with a triangular obtuse tooth near the articulation with the palm, and the inner margin of the index is granular along its proximal half. The upper and lower margins of the hand are carinate and two other divergent crests, prolonged to the tips of the fingers, are observed on the outer surface of the palm.

21. *Leptograpsus Ansoni* H. Milne Edw.

Leptograpsus Ansoni, H. Milne Edwards, Annales Sciences Naturelles, 3^e Série, T. XX, 1853, p. 172.

Mr. Kingsley in his „Synopsis of the Grapsidae” (Proc. Acad. Nat. Sciences of Philadelphia, 1880, p. 197) regards this species as identical with the common indo-pacific *Leptogr. variegatus* Fabr. The author considers moreover *Leptogr. planifrons* Dana and even all the tridentate *Leptograpsi* of Milne Edwards, as synonyms of the same species. Now the Leyden Collection contains two specimens (♂, ♀) from Valparaiso, which differ from a typical male specimen of *Leptogr. variegatus* M. Edw., kindly sent to me by Prof. Milne Edwards, and collected at the Marquesas, firstly by a slightly more quadrate carapace, of which the external orbital angles are a little more distant from one another in proportion to the greatest width of the cephalothorax, so that the latter appears a little broader anteriorly with less arcuate lateral margins; secondly by the somewhat more slender shape of the ambulatory legs, the joints of which are a little less enlarged. I, for that reason, suppose our specimens to

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belong to a different species and I think they belong to *Leptogr. Ausoni* H. Milne Edw., which inhabits the island of Juan Fernandez. For the rest our specimens seem to agree fully with *Leptogr. variegatus*. I cannot say whether the hands are less tuberculate or not, because the male individual is a young one and the other a female.

Leptogr. planifrons Dana is also distinct, as I suppose, the cephalothorax appearing on the figure of this species (Dana, Pl. XXI, fig. 3) even still slightly narrower anteriorly than in the type specimen of *variegatus* and the ambulatory legs appear much less slender than in our Valparaiso specimens. This species, however, may prove to be identical with *Leptogr. Gayi* M. Edw., or perhaps with *Leptogr. variegatus*, which is recorded by Miers from Valparaiso. (Miers, Report on the Brachyura of the Challenger Expedition, p. 257).

	N ^o . 1.	N ^o . 2.	N ^o . 3.
Dimensions:	♂	♀	♂
Greatest width of the cephalothorax	33 mm.	44 $\frac{1}{3}$ mm.	44 $\frac{1}{3}$ mm.
Distance between the external orbital angles . . .	24 $\frac{1}{3}$ »	32 $\frac{1}{4}$ »	30 $\frac{1}{4}$ »
Breadth of the front, immediately before the external postfrontal lobes . . .	13 $\frac{1}{2}$ »	17 $\frac{1}{2}$ »	17 $\frac{1}{3}$ »
Length of the cephalothorax	29 »	37 $\frac{1}{3}$ »	38 »
Length of the meropodites of the antepenultimate pair	21 »	26 $\frac{1}{2}$ »	26 »
Breadth of the meropodites of the antepenultimate pair	9 $\frac{3}{4}$ »	11 $\frac{1}{3}$ »	13 $\frac{1}{4}$ »

N^o. 1 and N^o. 2 are the two specimens of *Leptogr. Ausoni* M. Edw., N^o. 3 the Paris specimen of *Leptogr. variegatus* (Fabr.) M. Edw.

Only by the examination of a large number of specimens from the Chilian Seas this question can be resolved.

22. *Pachygrapsus crassipes* Randall.

(Pl. 5, fig. 11).

Pachygrapsus crassipes, Randall, Journal of the Academy of Natural Sciences of Philadelphia. Vol. VIII, 1839, p. 127.

Pachygrapsus crassipes, Kingsley, in: Proceed. Acad. Nat. Sciences of Philadelphia, 1880, p. 199.

? *Leptograpsus gonagrus*, H. Milne Edwards, Annales Sciences Naturelles, T. XX, 1853, p. 173.

Two specimens, a male and an ova-bearing female, collected by Mr. A. Forrer in the Gulf of California.

The cephalothorax of this species is somewhat broader than long, the proportion of the greatest width to the length being as 6:5. The distance between the external orbital angles is nearly exactly as long as the length of the cephalothorax. The upper surface is somewhat convex anteriorly as well as transversely. The cervical suture, bordering the gastric region posteriorly, is distinctly developed, and shallow depressions define the cardiac and intestinal regions; a shallow groove proceeds in an oblique direction from the base of the epibranchial teeth to the transverse groove which separates the gastric and cardiac regions, but does not quite reach that groove. In front of this oblique groove another oblique and shallow depression is observed, bordering the gastric region laterally. In the male the front is exactly half as broad as the greatest width of the cephalothorax, in the female a little broader; the front is obliquely inclined and its lateral margins diverge slightly backwards. It is rather prominent, the delicately granulated anterior margin is straight in the middle, but slightly emarginate towards the lateral angles, which appear obtusely dentiform, though projecting not so far forward as the straight middle part of the margin. The four postfrontal lobes are prominent, tuberculiform, the two internal ones a little broader

than the external and separated from one another by a longitudinal furrow with nearly parallel margins, issuing into the mesogastric area; the external lobes are separated from the internal ones by shorter and less deep grooves. The whole upper surface, with the exception of the cardiac and intestinal regions, is marked with a large number of elevated lines, which on the gastric region have a transverse, and on the branchial regions a somewhat oblique direction. Similar lines exist also on the postfrontal lobes, where they are more prominent; the upper surface of the front is marked with a few small transverse granules. For the rest the upper surface of the cephalothorax is smooth and glabrous. The lateral margins are arcuate and convex, and armed anteriorly with two stout and acute teeth, the anterior of which is larger than the posterior and forms the outer orbital angle.

The inferior orbital margin is minutely denticulate along its whole length and presents a narrow hiatus, fissure or emargination at the base of the external orbital tooth.

The inner suborbital lobe is very small and triangular. The basal joint of the outer antennae is strongly produced at its antero-external angle, which is obtuse or rounded and reaches as far as the inner suborbital lobe. The epistome is very short. The merns-joint of the widely gaping outer foot-jaws is as long as broad; the antero-internal angle of it is much produced.

The sides of the under surface of the cephalothorax are marked with oblique elevated lines; the pterygostomian regions present a few minutely granulated, short lines and are slightly pubescent.

The anterior legs of the male specimen are large, stout and equal. The anterior margin of the slightly concave inner surface of the arm is produced, distally truncate and dentate; the inner and the external sides are transversely rugose. This is also the case with the upper surface of the wrist, which is armed with a short acute tooth at the inner angle. The hands are quite as long as

the length of the cephalothorax. The palm is once and a half as long as the horizontal length of the fingers and as long as high; the outer surface is convex and perfectly smooth, presenting only a faint longitudinal line on the lower part, which proceeds somewhat obliquely from the articulation of the wrist to the tip of the immobile finger. The upper surface of the palm is margined above and the inner surface presents a few oblique rugose lines immediately below that margin. The upper margin of the dactylus is somewhat rugose at the base, for the rest the fingers are quite smooth; their tips are excavated and the inner margins feebly denticulated. Much smaller are the hands of the female, measuring only about two thirds of the length of the carapace; the fingers are as long as the palm and the latter is marked with some oblique rugose lines below near the articulation of the wrist. The ambulatory legs are short and stout. The meropodites of the last pair of legs have the distal angle of their inferior margin rounded; those of the penultimate pair present slight traces of two or three teeth; these small teeth, finally, are rather distinct at the distal angle of the inferior margin of the meropodites of the two anterior pairs. I may add that the meropodite of the right leg of the last pair in our male specimen shows faint traces of two teeth, which I have figured, whereas this limb is rounded on the left side. The dactylopodites are short, stout and spiniferous. The legs are nearly glabrous, only a few rows of short hairs being observed on the upper and lower surfaces of the carpopodites and propodites. The upper surface of the carapace is marked, on a violet-reddish ground-colour, with yellowish spots and lines, especially on the branchial, mesogastric, cardiac and intestinal regions. The anterior legs present a reddish ground-colour above, and are marked with yellow; the hands have a yellow outer surface, showing reddish reticulate lines on its upper part. The ambulatory legs present yellow markings on a reddish-violet ground-colour.

These two individuals have the following dimensions:

	♂	♀
Greatest width of the cephalothorax . . .	42 mm.	25 $\frac{1}{2}$ mm.
Distance between the external orbital angles	34 »	22 $\frac{1}{3}$ »
Breadth of the front, anteriorly . . .	21 »	13 $\frac{3}{4}$ »
Length of the cephalothorax . . .	35 »	22 »

The cephalothorax of the (smaller) female specimen appears a little less enlarged than that of the male.

Like Kingsley, I presume *Leptograpsus gonagrus* H. Milne Edw., of which the habitat is unknown, to be identical with this species. *Pachygrapsus maurus* Lucas represents our species in the Mediterranean Sea and seems to differ by the front, which is slightly emarginate in the middle and the external angles of which are not dentiform.

Pachygrapsus crassipes Randall inhabits California and the Sandwich Islands.

23. *Plagusia speciosa* Dana.

Plagusia speciosa, Dana, l. c. p. 369, Pl. XXIII, fig. 9.

One male from Paumotu and an ova-bearing female of which the locality is unknown.

As has already been observed by Miers (Report on the Brachyura of the Challenger Expedition, 1886, p. 273, footnote), this species differs in many points from *Plag. immaculata* Lam. and from the closely allied *Plag. depressa* Say.

The cephalothorax of *Plagusia speciosa* is broader anteriorly than the cephalothorax of *Plag. immaculata*, the distance between the external orbital angles being considerably larger in proportion to the length of the carapace. The upper surface is convex in the same degree; the tubercles are also depressed, but all are bordered anteriorly by a fringe of short stiff hairs, as in *Plag. tuberculata* Lam. The lateral margins are armed, behind the dentiform external orbital angles, with only two teeth, those of *Plag. immaculata* and *depressa* however with three; these teeth are, however, comparatively

larger and stouter than in the two lastnamed species. The anterior margin of the epistoma is divided in *Plag. immaculata* as well as in *Plag. speciosa* into three lobes, of which the middle one is much smaller than the two lateral ones. The two lateral lobes present three (or more) secondary lobes in the former species, but I observe in those of the male specimen of *Plag. speciosa* only one single small incision, and in the female the lateral lobes are even entire. The inferior margin of the orbits, on the contrary, appears entire in *Plag. immaculata*, but in *Plag. speciosa* this margin presents a larger emargination near the internal angle and several smaller ones between this incision and the external angle, so that the margin appears irregularly denticulate or lobate.

The third, fourth, fifth and sixth segment of the abdomen of the male are coalescent; the abdomen is smooth, and marked with some faintly impressed transverse lines. The segments of the sternum bear also a few impressed lines, of which those of the anterior segment are for a part fringed by short stiff hairs. In the female the third, fourth and fifth segment are coalescent and here the abdomen is also ornamented with a number of transverse and symmetrical impressed lines, each of which is bordered by a fringe of short stiff hairs. The sternum and the abdomen of the male of *Plag. immaculata*, however, present no impressed lines, and the fourth, fifth and sixth segment only seem to be coherent; the abdomen of the female of that species is seven-jointed and also smooth.

The hands are stouter, more robust and comparatively higher than those of *Plag. immaculata*. Those of the male are about once and a half, those of the female scarcely twice as long as high; the hands of *Plag. immaculata* are comparatively less high and therefore more slender. The hands of Dana's species present a greater resemblance to the form we observe in the species of the genus *Grapsus*. The convex outer surface of

the hands shows a few impressed longitudinal lines, each of which is bordered by a fringe of very short stiff hairs; on the upper margin two similar lines are observed, between which many very small and rounded tubercles are seen. The inner surface of the palm appears granulated in the middle and below near the lower margin, and those granulated parts are separated from one another by smooth portions. The dactylus is tuberculiferous above and externally and presents three longitudinal furrows, which are bordered by very short stiff hairs.

The ambulatory legs wholly resemble those of *Plag. immaculata* in form and length and the anterior margin of the meropodites is armed in both species with a single acute tooth, a little before the distal end. Whereas, however, the lower surface of the ambulatory legs of *Plag. immaculata* is entirely smooth, those of *Plag. speciosa* are marked with numerous impressed lines, each of which is bordered by a fringe of short stiff hairs; these lines run transversely on the meropodites, and longitudinally on the carpo- and propodites. The lobes above the bases of the second and third pairs of ambulatory legs are small and dentate.

The dimensions of these two specimens are as follows:

	♂	♀
Distance between the external orbital angles	23 mm.	20 $\frac{1}{2}$ mm.
Length of the cephalothorax, the epistoma included	29 »	25 »

The dimensions of two specimens of *Plag. immaculata*, however, are as follows:

	♂	♀
Distance between the external orbital angles	14 mm.	16 $\frac{1}{3}$ mm.
Length of the cephalothorax, the epistoma included	19 »	24 »

Plagusia speciosa Dana is a very rare species and has hitherto only been recorded from the Paumotu Archipelago.

24. *Clistocoeloma merguiensis* de Man.

Clistocoeloma merguiensis, de Man, in: The Journal of the Linnean Society of London. Vol. XX, 1888, p. 195, Pl. XIII, fig. 10.

One female without eggs, from Amboina.

This specimen is exactly twice as large as the specimen from the Mergui Archipelago which I have described (l. c.), but nevertheless it presents nearly all the distinguishing characters of the type specimen. The compressed antero-lateral margins, however, are provided only with two teeth, including the external orbital angle: I find no trace of the third tooth which exists in the Mergui specimen. The three last joints of the ambulatory legs present also a somewhat more slender form on the quoted figure than in this specimen from Amboina.

With the exception of the hands, the whole animal is covered with a very short, dark brown close down, and the legs are moreover still a little hairy; the dactylopodites are also tomentose and hairy. The ground-colour of the cephalothorax and of the legs beneath the down is an ochreous yellow. The right chelipede is a little larger than the left; the hands are almost entirely glabrous, the upper margin of the palm presents a longitudinal crest and the upper margin of the dactylus is covered along its proximal half with a row of 12—14 very small, somewhat transverse tubercles. The upper margin of the mobile finger of the much younger Mergui specimen is described as being punctate, the small tubercles evidently being not yet sufficiently developed to be observed.

Dimensions:

	♀
Distance between the extra-orbital teeth . . .	16 mm.
Length of the carapace	13½ »
Breadth of the front.	10½ »

Provisionally I refer this form to *Clistoc. merguiensis*.

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Genus *Sesarma* Say.

I. Lateral margins entire. Hands in the male without pectinate ridges.

25. *Sesarma Aubryi* A. Milne Edw.

Sesarma Aubryi, A. Milne Edwards, Nouvelles Archives du Muséum, T. IX, p. 307, Pl. XVI, fig. 3.

One male specimen from the Pacific Ocean, a second from the Island of Morotai, collected by Bernstein, and an ova-bearing female from Amboina.

I give below the dimensions of these specimens and of two others which belong to *Metasesarma Rousseauxi* H. Milne Edw., a species which presents a most striking resemblance to *Sesarma Aubryi* in its outer appearance.

The front of *Sesarma Aubryi* is exactly half as broad as the greatest width of the cephalothorax, but the front of *Metasesarma Rousseauxi* is always a little broader. The penultimate joint of the male abdomen of *Sesarma Aubryi* is comparatively a little broader and shorter than in the other species, and the terminal segment of the female abdomen is more profoundly pushed into the penultimate segment than is the case in the *Metasesarma* ¹⁾.

	<i>Sesarma Aubryi</i> .			<i>Metas. Rousseauxi</i> .	
	1.	2.	3.	♂	♀
	♂	♂	♀	♂	♀
Greatest width of the cephalothorax	mm.	mm.	mm.	mm.	mm.
	14	13	11 1/2	14 1/2	12 3/4
Breadth of the upper margin of the front.	6 1/5	6 1/2	5 3/4	8 1/6	7 1/6
Length of the cephalothorax	12	11 2/3	10	12 1/2	11 1/2

1) I have given the dimensions of four specimens of these species in: Zoolog. Jahrbücher, Bd. II, 1887, p. 661. I may observe that only the adult male from New Guinea belongs to *Sesarma Aubryi*, the three others, however, to *Metasesarma Rousseauxi*!

N^o. 1 is the male from the Pacific Ocean, N^o. 2 the male from Morotai, N^o. 3 the female from Amboina.

II. Lateral margins dentate. Hands in the male without pectinate ridges.

26. *Sesarma Edwardsii* de Man, var.:
brevipes de Man.

Sesarma Edwardsii, var.: *brevipes* de Man, in Zoolog. Jahrb. von J. W. Spengel, Bd. IV, 1889, p. 425, Taf. IX, fig. 6.

Two females from unknown locality, of which the larger has the following dimensions:

Distance between the external orbital angles	16 ³ / ₄ mm.
Length of the cephalothorax	14 ³ / ₄ »
Breadth of the front.	9 ⁴ / ₅ »

27. *Sesarma Smithii* H. Milne Edw.

Sesarma Smithii, H. Milne Edwards, Archives du Muséum, T. VII, p. 149, Pl. IX, fig. 2.

Sesarma Smithii, de Man, in: Zoolog. Jahrb. von J. W. Spengel, Bd. IV, 1889, p. 426.

A male and a female from the Fiji Islands, which present the following dimensions:

	♂	♀
Distance between the external orbital angles	26 ² / ₃ mm.	23 ¹ / ₄ mm.
Greatest width of the cephalothorax	31 ¹ / ₄ »	26 ³ / ₄ »
Length of the cephalothorax, in the middle.	27 ³ / ₄ »	23 ¹ / ₄ »
Breadth of the front, between the eyes	14 ¹ / ₂ »	12 ³ / ₄ »
Horizontal length of the hand . .	30 »	21 »
» » » fingers . .	19 »	14 »
Height of the hand	19 »	12 »

The cephalothorax of the female specimen is exactly as long as the distance between the external orbital angles: in still younger specimens this distance will be larger than the length.

28. *Sesarma atrorubens* Hess.

Sesarma atrorubens, Hess, Beiträge zur Kenntniss der Decapoden-Krebse Ost-Australiens, 1865, p. 653. — de Man, in: Zoolog. Jahrb. von J. W. Spengel, Bd. II, 1887, p. 676.

Two male specimens from the Fiji Islands.

These individuals are a little larger than the male, of which I have given a description in the »Zoologische Jahrbücher,» and the joints of their abdomen are somewhat less enlarged in proportion to their length, so that e.g. the posterior margin of the penultimate segment is not yet twice as long as the length of this segment. As may be seen from the dimensions given below, the posterior margin of the cephalothorax of adult males is a little less broad than the breadth of the front, whereas in younger individuals the front is a little less broad than the posterior margin. For the rest the dimensions agree, as to their proportion, with those I have given in the Zoologische Jahrbücher, l. c.

The larger specimen presents the following dimensions:

	♂
Distance between the external orbital angles	32½ mm.
Greatest width of the cephalothorax . . .	42 »
Length of the cephalothorax, in the middle	37 »
Breadth of the front between the eyes . .	16¼ »
Breadth of the posterior margin of the cephalothorax	15¾ »
Breadth of the posterior margin of the penultimate abdominal segment	13¼ »
Length of this segment	7 »
Horizontal length of the hand	33 »
» » » » fingers.	21½ »
Height of the hand	18½ »

29. *Sesarma trapezoidea* Guérin.

Confer: de Man, in: Zoolog. Jahrbücher, herausgeg. von J. W. Sengel, Bd. II, 1887, p. 678; — id. Bd. IV, 1889, p. 426—427, Pl. IX, fig. 7 and Pl. X, fig. 8.

The collection contains one male specimen and an ova-bearing female from the Pacific Ocean, and two other females from Amboina, of which the smaller is also provided with eggs. These specimens present the following dimensions:

	Pacific ♂	Ocean. ♀	Amboina.	
	mm.	mm.	♀	♀
Distance between the extra-orbital teeth	24 ² / ₃	18	25	21 ¹ / ₂
Breadth of the cephalothorax above the third pair of legs .	32	23	28 ¹ / ₂	25 ¹ / ₂
Length of the carapace, in the middle line	30 ¹ / ₄	22	29 ¹ / ₂	25 ¹ / ₃
Breadth of the front at its superior margin	13	9	14	11 ¹ / ₂
Breadth of the posterior margin of the cephalothorax	10 ¹ / ₂	9 ¹ / ₄	11	10 ¹ / ₂
Horizontal length of the hand .	23	9 ¹ / ₂	14	
» » » » fingers .	11 ¹ / ₂	5 ¹ / ₃	7 ³ / ₄	
Length of the meropodites of the penultimate pair of legs. . .	26	18		20
Length of the propodites of the penultimate pair of legs. . .	17 ¹ / ₂	13		14 ¹ / ₂
Length of the dactylopodites of the penultimate pair of legs. . .	13	9		10 ¹ / ₂
Length of the meropodites of the last pair of legs	19 ¹ / ₃	13 ¹ / ₄		15 ¹ / ₂
Length of the propodites of the last pair of legs	13	9 ¹ / ₂		11
Length of the dactylopodites of the last pair of legs	12	8		9

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I have described, two years ago, a male from the Fiji Islands as a variety »*longitarsus*», characterized, besides by comparatively longer dactylopodites, by a few other slight differences regarding the form of the cephalothorax and the relative length of the meropodites of the ambulatory legs. In the two individuals from the Pacific Ocean, quoted above, the dactylopodites of the ambulatory legs are also elongate, as in the male from the Fiji Islands, but the cephalothorax presents quite the same form and the meropodites have almost the same length as in the type. Thus the front is comparatively less broad than in the male from the Fiji Islands and the four postfrontal lobes are less prominent and situated in a rather concave line both in the male and in the female. As in the type, the distance between the epibranchial teeth is again a little larger than the distance between the external orbital angles, whereas in the male from the Fiji Islands the external orbital angles are, on the contrary, a little more distant than the epibranchial teeth. The variety »*longitarsus*» may therefore afterwards prove to be an individual variation.

The two female specimens from Amboina agree very well with the type. The postfrontal lobes are less prominent than in the male from the Fiji Islands and situated in a very slightly concave line; as regards the epibranchial teeth, they are just as far distant from one another as the external orbital angles.

III. The third section, in which the lateral margins of the cephalothorax are entire and the hands in the male provided with pectinated ridges, contains at present *nine* indo-pacific species, which may be characterized as follows:

A. Inferior margins of the meropodites of the ambulatory legs entire.

Lateral margins parallel, front exactly half as broad as the distance between the extraorbital teeth *picta* de Haan.

Lateral margins more or less convergent backwards, front constantly a little broader than half the distance between the external orbital angles.	Tubercles of the upper margin of the dactylus in the male symmetrical, oval, with a smooth transverse ridge in the middle.		<i>quadrata</i> Fabr.			
	Tubercles of the upper margin of the dactylus in the male scalariform.	Dactylopodites extraordinarily short, measuring $\frac{1}{3}$ of the length of the propodites		<i>leptosoma</i> Hilg.		
		Dactylopodites of usual length, measuring at least $\frac{2}{3}$ of the length of the propodites.	Inner surface of the hands in the male without a distinct granulated crest; front deeply emarginate. .		<i>Melissa</i> de Man.	
			Inner surface of hands in male with a distinct granul. crest.	Pectinated ridges parallel with the oblique proximal margin of hand; front very slightly emarginate . .		<i>erythrodactyla</i> Hess.
				Pectinated ridges not parallel with the oblique proximal margin of hand; front deeply emarginate .		<i>bataviana</i> de Man.

B. Inferior margins of the meropodites of the ambulatory legs dentate.

Fingers externally thickly clothed with hairs *barbimana* de Man.

Fingers externally glabrous.	{	Upper surface of the hands of the male	
		with two pectinated ridges	<i>edamensis</i> de Man.

Fingers externally } Upper surface of the
 glabrous. } hands of the male
 with two longer and
 seven or eight shorter
 pectinated ridges. . *Andersoni* de Man.

30. *Sesarma quadrata* Fabr.

Sesarma quadrata, Fabricius, Supplem. Entomol. System. p. 341.

Sesarma quadrata, de Man, in: Zoolog. Jahrb. herausgegeben von J. W. Spengel, Bd. II, 1887, p. 655.

The Leyden Collection contains the following specimens: one male from Padang, another male from Macassar, a young male collected at Bezoeki, three male specimens from the Indo-pacific Seas, of which the exact locality is unknown, and finally the male type specimen of *Sesarma affinis* de Haan from Japan.

These specimens present the following dimensions:

	Macassar.	Padang.	Indo-pacific Seas.			type specimen of <i>Sesarma affinis</i> de Haan. Japan.
	♂ mm.	♂ mm.	♂ mm.	♂ mm.	♂ mm.	♂ mm.
Distance between the external orbital angles.	20	21	19 $\frac{1}{3}$	18	16 $\frac{1}{4}$	19 $\frac{1}{4}$
Length of the cephalothorax. . .	16 $\frac{1}{4}$	16 $\frac{2}{3}$	14 $\frac{3}{4}$	14 $\frac{1}{2}$	12 $\frac{3}{4}$	14 $\frac{3}{4}$
Breadth of the front	11 $\frac{1}{3}$	12 $\frac{2}{3}$	11 $\frac{1}{2}$	11	9 $\frac{2}{3}$	11

The male specimen from Macassar, on account of the proportion of the distance between the external orbital angles and the length of the cephalothorax, must be referred to the variety *aspera* Heller, this specimen being a little longer than the original specimen of Fabricius. The upper margin of the mobile finger, however, presents only twelve oval, transverse tubercles as in the type specimen, so that this crab makes a transition to the type. The inner surface of the palm is provided with a rather prominent, transverse, granulated crest, composed of twelve granules.

The front of the male specimen, collected at Padang, is a little broader in proportion to the distance between the external orbital angles than the front of the specimen which was described by Fabricius. The inner surface of the equal hands presents a short granulated crest, composed of five to seven granules, and the dactylus bears thirteen or fourteen oval transverse tubercles. These tubercles are symmetrical and the transverse smooth ridge lies quite in the middle of each; in the Macassar specimen that ridge lies somewhat nearer to the distal end of the tubercle.

The Japanese male specimen, finally, wholly agrees with the type, but the mobile finger is ornamented only with seven or eight tubercles, and the crest on the inner surface of the hands is scarcely distinguishable. I consider this form as a variety: *affinis* de Haan.

Sesarma quadrata Fabr. is probably a rather rare species and the dimensions seem to be somewhat variable. A large number of specimens from different localities are necessary to make us better acquainted with these varieties.

31. *Sesarma erythrodactyla* Hess.

Sesarma erythrodactyla, Hess, Beiträge zur Kenntniss der Decapoden-Krebse Ost-Australiens, 1865, p. 25, Pl. VI, fig. 10. — de Man, in: Zoolog. Jahrbücher, herausgegeben von J. W. Spengel, Bd. II, 1887, p. 686, and Bd. IV, 1889, p. 436.

The Leyden Collection contains two young males from Sydney and a third also young male individual from the Pacific Ocean. The number of transverse prominences on the mobile finger of the chelipedes amounts to 23 in the largest, to 25 in the following and to 22 in the smallest specimen. In all these specimens the transverse granulated crest on the inner surface of the hands is very distinct. The outer surface of the palm presents in all, about in the middle, a short minutely granulated transverse line, but I do not know whether this ridge occurs also in the adult or not. The outer surface of the fingers is rather

convex and smooth. This species is also characterized by the yellowish red colour of the fingers.

The two largest specimens have the following dimensions :

Distance between the external orbital			
angles	$15\frac{2}{3}$ mm.	$15\frac{1}{4}$ mm.	
Length of the cephalothorax . . .	$12\frac{1}{3}$	» 12	»
Breadth of the front.	$9\frac{1}{3}$	» 9	»

32. *Sesarma bataviana*, n. sp.

(Pl. 6, fig. 12).

One single male specimen, collected by Mr. J. Semmelink on the seashore of Batavia.

This species which is positively different from *Ses. quadrata* Fabr., *Ses. picta* de Haan and *Ses. erythrodictyla* Hess, may perhaps prove to be identical with *Ses. Melissa* de Man, which inhabits the Bay of Bengal, off the coast of Tenasserim. But as I have no typical specimen of the Mergui species before me, I cannot decide this question.

Sesarma bataviana belongs to that section of the genus, in which the lateral margins are entire and in which the upper surface of the palm in the male is provided with parallel pectinated ridges. In comparing our specimen with the figure of *Sesarma Melissa*, which I have published in my Report on the Crustacea of the Mergui Archipelago, I hardly find any difference. The proportion of the distance between the external orbital angles and the length is the same in both species, but the front is a little broader in *Ses. Melissa* and in *Ses. erythrodictyla*. The upper surface presents the same interregional grooves as in the Mergui species; small tufts of short hair are scattered on it, especially on the postfrontal lobes. The front is a little broader than half the distance between the external orbital angles; the four subequal postfrontal lobes are but little prominent, and project less forward than the inferior margin of the front.

The inferior margin is, as in *Ses. Melissa*, rather

profoundly and widely emarginate in the middle, and presents therefore on each side of this median sinus a rather prominent, rounded lobe; the inferior frontal margin of *Ses. erythrodactyla*, however, is scarcely emarginate and the lateral lobes are much less prominent. As in *Ses. Melissa*, the orbits are rather large, the external orbital angles acute and prominent, and the lateral margins are slightly concave; the lateral sides of the upper surface are wrinkled by several oblique elevated lines.

The anterior legs are of equal size and rather large. The upper margin of the arms terminates in an acute tooth, as in *Ses. Melissa*; in *Ses. erythrodactyla* this tooth does not exist, the upper margin terminating, before the distal end, in an obtuse angle. As in the Mergui species, the anterior margin is also armed with an acute spine. The upper surface of the wrist is covered with minutely granulated transverse lines and unarmed at its internal angle. The hands (fig. 12) are characteristic. They are of equal size and a little more than once and a half as long as high, the palm about as long as high, and the fingers horizontally as long as the palm. The inner margin of the upper surface of the palm rises a little towards its distal end; the upper surface presents two parallel pectinated ridges, of which the anterior one consists of 17 horny teeth, the posterior one of 13. The pectinate ridges have a different direction in this species and in *Ses. erythrodactyla*: in the latter they run very obliquely, close to and parallel with the oblique posterior margin of the upper surface, the two ridges being as far distant from one another as the posterior ridge from the posterior margin; in *Ses. bataviana*, however, the ridges do not run parallel with the oblique posterior margin of the upper surface, but they form right angles with the short raised inner margin of it, thus leaving a triangular space between the posterior ridge and the posterior margin. I suppose,

when looking at fig. 7 of Plate XII of my Report on the Crustacea of the Mergui Archipelago, that the pectinate ridges have the same oblique direction in *Ses. Melissa* and in *Ses. erythrodactyla*, but I am quite unable to resolve this question.

The upper surface of the palm in our new form appears a little more granular, than in *Ses. erythrodactyla*, the granules being arranged mostly in oblique lines, which run from the pectinate ridges to the proximal margin of the upper surface. The outer surface of the palm is minutely granular, like in *Ses. erythrodactyla*; these granules are more crowded towards the base of the immobile finger and gradually appear arranged in oblique lines towards the rounded under margin. The proximal half of the outer surface of the immobile finger is flattened and distinctly separated from the under margin of the finger by a longitudinal ridge; the distal end of the finger is, however, convex and rounded. In *Ses. erythrodactyla* the whole outer surface of the index appears convex, smooth and rounded, and does not present the described longitudinal ridge.

The upper margin of the dactylus bears a row of 20—21 transverse prominences, which have exactly the same structure as in *Ses. erythrodactyla*; they are namely scalariiform, the proximal part of each prominence being depressed, minutely and longitudinally striated, and larger than the obliquely descending distal part. According to my description of *Ses. Melissa*, the anterior distal declivity of the transverse prominences should be larger in this species than the posterior or proximal one, but I have afterwards observed (Zoolog. Jahrbücher, Bd. IV, 1889 p. 435) that this description perhaps may be incorrect. The upper surface of the mobile finger is somewhat granular at the base, but the rest of its outer surface is smooth. The inner surface of the palm is somewhat granular and provided with a short, but prominent granulated transverse crest, composed of six or seven granules. This crest is the prin-

incipal difference I find in comparing our specimen with the description of *Ses. Melissa*, this species being described as presenting only a trace of a crest.

The ambulatory legs completely resemble those of *Sesarma Melissa* and are somewhat more slender than those of *Ses. erythrodactyla*.

Only by examining a large number of specimens, both from the Mergui Archipelago and from the seashore of Batavia, it will be possible to decide whether *Ses. Melissa* is identical with *Ses. bataviana* or not.

The dimensions of this specimen are as follows:

Distance between the external orbital angles	16 mm.
Length of the cephalothorax	13 »
Breadth of the front	$8\frac{2}{3}$ »
Length of the hands	$13\frac{1}{2}$ »

33. *Sesarma barbimana*, n. sp.

(Pl. 6, fig. 13).

One single male specimen, collected by Mr. Semmelink in 1882 on the seashore of Batavia.

This very small new species is closely allied to *Ses. Andersoni* de Man, which inhabits the Mergui Archipelago, but may be distinguished at first sight by the structure of the hands. The cephalothorax presents nearly the same form. It is a little broader than long, and the distance between the external orbital angles is only once and a third as long as the length. The upper surface is depressed and presents the ordinary interregional grooves as in *Ses. Andersoni*, but instead of being quite glabrous and smooth, it is ornamented, especially anteriorly, with numerous, small, transverse tufts of very short stiff black hairs. When seen under a magnifying glass, the upper surface appears moreover rather coarsely punctate, especially in the middle and posteriorly. The front is as broad as in *Ses. Andersoni* and vertically deflexed: its anterior

margin is slightly and widely emarginate in the middle. The orbits are large, and the short and thick eye-peduncles project a little beyond the external orbital angles, which are less prominent than in *Ses. Andersoni*. The four post-frontal lobes are subequal and separated from one another by shallow grooves; they project still less forward than in the Mergui species. The upper orbital margin is very oblique. The lateral margins of the carapace are sharp and compressed anteriorly; they run for a short distance behind the external orbital angles rather parallel, but afterwards converge backward rather rapidly and become slightly concave. The sides of the upper surface are wrinkled by several oblique elevated lines and the foremost of these lines projects a little outward beyond the lateral margin, so that the latter presents a trace of a second tooth, quite as in *Ses. Andersoni*. As regards the under surface of the cephalothorax, the external maxillipedes and the male abdomen, both species nearly agree with one another.

Unfortunately, our single specimen has lost the left che-lipede, so that I cannot say if they are unequal in size like in *Ses. Andersoni*. The ischiopodite bears a small acute tubercle anteriorly. The acute upper margin of the arm is entire, and its distal end does not terminate in a tooth. The anterior margin is dilated distally so as to form a triangular crest which is minutely denticulate anteriorly. The outer surface of the arm is transversely rugose. The upper surface of the wrist is covered with finely granulated transverse lines, many of which bear short and stiff black hairs, similar to those on the upper surface of the cephalothorax. The inner angle of the wrist is unarmed. The hands (fig. 13) are characteristic. As regards the proportion of the horizontal length of the hand to the height of the palm, our species almost agrees with *Ses. Andersoni*. The fingers are horizontally quite as long as the palm. The slightly convex outer surface of the latter is quite smooth in the middle, but covered with minutely granular and somewhat hairy lines near the articulation of the wrist.

The upper margin of the palm is also finely granular and bears a pectinated ridge which runs in an arcuate line from the distal end of the inner margin of the upper surface to the middle of the proximal margin of it; this ridge consists of nearly twenty horny teeth, which decrease in length towards the posterior margin; behind this ridge still a shorter one occurs, formed by a much smaller number of shorter teeth. Our species therefore differs from *Ses. Andersoni*. the upper surface of the palm of which presents seven or eight short, transverse and parallel ridges placed before the principal ridge, between the latter and the distal margin of the upper surface. Like in *Ses. Andersoni* an elevated slightly sinuous line runs on the outer surface of the palm, not far from the under margin, from the articulation of the wrist to near the extremity of the index. The under surface of the palm and of the index is rounded, convex and smooth. The outer sides of the fingers are slightly concave and thickly clothed with dark brown hairs, which form woolly patches, similar to those which are found in several other Grapsidae; the fingers, however, are quite glabrous at their tips. The upper margin of the mobile finger, which is distinctly separated from its slightly concave, hairy outer surface, is covered with a row of twelve transverse ridges, similar to those which ornament the dactylus of *Ses. Andersoni*. The upper surface of the finger is somewhat granular at the base on the inner and a little hairy on the outer side. Both fingers have slightly excavated horny tips; the inner margin of the dactylus presents four small teeth, of which the distal one is a little larger than the preceding; the inner margin of the index is armed in the middle with two teeth, placed close together, and a little larger than those of the mobile finger, and with a third small tooth immediately before the horny tip. The inner surface of the palm is finely granular, but the fingers are smooth internally.

The ambulatory legs resemble those of *Ses. Andersoni*,

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but they are probably a little shorter and a little less slender. The meropodites are perhaps a little more enlarged; their upper margin terminates, before the distal end, in a tooth and the inferior margin is denticulate, presenting, along the distal end, several acute teeth of which the proximal one is the largest and the others gradually decrease in size towards the articulation of the wrist. The ambulatory legs are somewhat hairy like those of *Ses. Andersoni*.

Our specimen has a reddish ground-colour and the outer surface of the hand is violet.

	♂
Distance between the extraorbital teeth.	$10\frac{3}{4}$ mm.
Length of the cephalothorax	$8\frac{1}{4}$ »
Breadth of the front.	$6\frac{1}{3}$ »

34. *Eupagurus hirtimanus* White.

Pagurus hirtimanus, White, List Crust. British Museum, 1847, p. 60 (sine descriptione).

Eupagurus japonicus?, Miers, Annals and Magazine of Natural History, 5th ser. vol. V, 1880, p. 375, Pl. XIV, fig. 6 and 7.

Eupagurus hirtimanus, de Man, in: Archiv f. Naturgeschichte, Jahrg. 53, 1888, p. 426.

? *Eupagurus sinuatus*, Stimpson, Proc. Acad. Nat. Sciences of Philadelphia, 1858, p. 250.

Two specimens, ♂ and ♀, from the Island of Ponapé.

Both specimens certainly belong to White's species which was described firstly by Miers and recently by myself, but it appears very probable to me that *Eup. sinuatus* Stimps. from Sydney is identical with this species. If this is really the case, Stimpson's name has the priority, because White has not published a description. The internal margin of the right hand presents a narrow but rather deep emargination near the articulation of the wrist as well as near that of the mobile finger, so that Stimpson's definition »*margine interno ad manus dactylique commissuras sinuato*» is quite applicable to our species. Both specimens are younger than the specimen from Amboina, lately described by me, and it is for that reason that the peduncles

of the external antennae are comparatively a little shorter, so that the eye-peduncles reach still to the distal third of the terminal joint, and secondly that the eye-peduncles are a little longer than the hairy basal spine of these antennae.

The anterior margin of the outer surface of the arms of the chelipedes is armed along its distal half with sharp spinules which are larger on the left chelipede than on the right one.

The propodites of the second and third pair of legs present traces of a reddish transverse ring or band.

This species is characterized by the triangular wrist of the right chelipede, being as long as measures the breadth of its anterior margin, which is still slightly shorter than the length of the palm and presenting on its upper surface two parallel rows of spinules, between which the wrist appears smooth and glabrous — and finally by the dactylopodites of the second and third pair of legs being shorter than the propodites.

The cephalothorax of the female is 9 mm. long, the larger hand is $8\frac{3}{4}$ mm. long, and the palm is 6 mm. broad.

Eup. hirtimanus has been also recorded from the Philippines and from the Fiji Islands; its geographical range would be rather extensive, when this species should be indeed identical with *Eup. sinuatus* Stimpson.

The nearest ally of this species is *Eupagurus Traversi* Filhol from Cook's Straits and from Stewart Island, but the larger hand of this form is armed with six longitudinal rows of sharp conical tubercles.

35. *Calcinus elegans* H. Milne Edw.

Pagurus elegans, H. Milne Edwards, Annales des Sciences Naturelles, 2e Série, Tome VI, 1836, p. 278, Pl. XIII, fig. 2.

Two specimens from the Pacific Ocean.¹⁾

1) I may observe that Milne Edwards evidently does not characterize at all his *Pagurus chilensis* (l. c. p. 279), when he says that the eye-peduncles are

This species is at first sight distinguished by its coloration. Our specimens do not fully agree with the figures of this species, published by Dana (Pl. XXVIII, fig. 10). Firstly the eye-peduncles are comparatively a little longer in our specimens, secondly the basal scales of the outer antennae are spinose not only at the internal, but also at their external margin, and the legs of the second and of the third pair, finally, present a somewhat less slender form.

I may add the following about our specimens. The cephalothorax is moderately convex and smooth; a few small tufts of hair exist on the anterior part in front of the cervical suture, which is distinctly longer than broad; these tufts are implanted near the lateral margins, and a few occur also on the posterior membranaceous part immediately behind the cervical suture. The anterior margin of the cephalothorax has been exactly figured by Dana (Pl. XXVIII, fig. 10b). The V-shaped groove is distinct and the upper surface of the cephalothorax is punctate. The eye-peduncles are much longer than the anterior margin of the cephalothorax, viz. about once and a half as long; the ophthalmic scales terminate in a small spinule and are small and triangular. The peduncles of the external antennae project a little beyond the middle of the eye-peduncles. The basal joint presents a minute spinule at the distal end of the inner margin and two others on that of the outer one; the antennal scale is short, spiniform and hairy, it projects but little beyond the distal end of the penultimate joint of the antennal peduncle, and is armed on each side with two or three sharp spinules. The penultimate joint of the antennal peduncle presents a sharp spinule anteriorly as well as posteriorly at the distal end, and the flagella are glabrous.

much longer than the breadth of the anterior margin of the cephalothorax, because they have comparatively the same length in *Calcinus elegans*. This is at first sight obvious when looking at the figures of the two species, published by the french author.

The upper margin of the wrist of the left chelipede terminates in a small sharp tooth, and the upper surface presents a tubercular eminence, which occurs also in other species of this genus and which is separated from the upper margin by a groove. The larger hand is scarcely compressed, the palm is quite as long as high and the fingers are a little shorter than the palm. The outer surface of the palm is slightly convex and smooth, the upper margin more or less rounded, like the lower margin. The fingers, when closed, only leave a small hiatus between themselves and are covered everywhere with very small tubercles, which are more or less rounded and of different size; the mobile finger is armed with three teeth, which decrease in size towards the tip, the index presents also two or three teeth. A few small tubercles, similar to those of the fingers, are seen on the distal part of the outer surface of the palm.

The lower margin of the outer surface of the arm of the right chelipede presents two or three spinules a little before the distal end; the acute upper margin of the wrist presents two very small spinules and terminates in a somewhat larger one. The compressed right hand presents about the same form as in other species of this genus. The sharp upper edge is armed with five teeth; the palm is a little higher than long and nearly as long as the fingers.

The upper margin of the mobile finger presents two rows of sharp small teeth, and similar, more or less acute and small tubercles exist on the distal part of the outer surface of the palm; the index, finally, is also every where beset with small tubercles. The right hand is somewhat hairy on the upper as well as on the lower margin.

The dactylopodites of the second pair of legs are a little shorter, those of the third pair about as long as the propodites. These two pairs of legs are hairy at their inferior margin and the dactylopodites and propodites of the third pair especially are covered with dense and long hairs.

The cephalothorax of the larger specimen has a length of 12 mm.; the anterior part in front of the cervical suture is 6 mm. long and $4\frac{3}{5}$ mm. broad, and the anterior margin is $4\frac{1}{4}$ mm. broad. The eye-peduncles have a length of 6 mm., and are as long as the anterior part of the cephalothorax. As regards the coloration, our specimens fully agree with Dana's description.

This species has been recorded from New Ireland (Milne Edwards), Tahiti (Heller) and the Loo Choo Islands (Stimpson).

36. *Calcinus nitidus* Heller.

Calcinus nitidus, Heller, Novara-Reise, 1865, p. 89, Pl. VII, fig. 4.

Three specimens, one from Tahiti, the two others from an unknown locality.

This species differs from *Calcinus elegans* Milne Edw. especially by the quite different coloration and by the second and third pair of legs being more slender and less hairy.

Our specimens are all very young and it must perhaps be attributed to their very small size that the fingers of the larger hand are not gaping and that the tubercle on the upper surface of the wrist of the left chelipede is distinctly developed, for I suppose that this tubercle was worn off and therefore less distinct in Heller's adult specimens. As regards the structure of the cephalothorax, the eye-peduncles and antennae, our species agrees very much with *Calcinus elegans*. The anterior legs are also similar in both species, but the fingers are more finely granulate and gaping in adult specimens.

The second and third pair of legs are more slender, much less hairy and their dactylopodites are considerably shorter than the propodites.

The cephalothorax, the eye-peduncles and the anterior legs are whitish, and, with the exception of the eye-peduncles, marked with a few large spots of a yellowish

red colour. A single spot is seen on the gastric region of the cephalothorax. The arms and the palmar portion of the hands are marked on the outer as well as on the inner surface with a similar large spot, and the carpopodites of the anterior legs present also a spot on their upper margin near the articulation with the arms; the latter, finally, and the carpopodites present a spot on their under surface. The second and third pair of legs are entirely yellowish red. The dactylopodites are figured too long in Heller's work.

The specimen referred by Lenz and Richters (Beitrag zur Krustaceenfauna von Madagascar, 1881, p. 6) to *Calcinus nitidus* apparently belongs to another species.

Calcinus nitidus Heller inhabits the shores of Tahiti.

37. *Clibanarius vulgaris* Dana.

Clibanarius vulgaris, Dana, l. c. p. 462.

Clibanarius infraspinatus, Hilgendorf, de Man, in: The Journal of the Linnean Society of London, Vol. XXII, 1888, p. 237.

Two young specimens, of which the larger one is an ova-bearing female; the smaller one inhabits a *Natica*-shell. The larger specimen, the cephalothorax of which has a length of 16 mm., fully agrees with a specimen of *Clib. infraspinatus* from the Mergui Archipelago, which I have before me, but the narrow red longitudinal lines, with which the second and third pair of legs are ornamented, are not visible, quite as is the case with the large typical specimen of Herbst's *Cancer clibanarius* in the Berlin Museum. In the other specimen these lines are faintly visible, but on his turn this individual shows some other differences. The right chelipede is namely a little larger than the left, and I find on the inner margin of the immobile finger, no trace of the distal tooth which occurs in adult individuals close to the horny tip. The inner margins of the under surface of the arms present no trace of the elevated dentiform tubercle, by which typical specimens are characterized, and which neither occurs in the

specimen of Herbst, which I regard therefore as a variety (confer: de Man, Archiv für Naturgeschichte, Jahrg. LIII, 1888, p. 441). The cephalothorax of this smaller specimen has only a length of 12 mm.

38. *Clibanarius taeniatus* H. Milne Edw.

Pagurus clibanarius, Quoy and Gaimard, in: Voyage de l'Uranie, Zoologie, Crust. p. 529, Pl. 78, fig. 1 (1824).

Pagurus taeniatus, H. Milne Edwards, in: Annales Sciences Naturelles, Série III, Zool. Vol. X, p. 63 (1848).

Clibanarius taeniatus, Miers, Report on the Zoolog. Coll. made during the Voyage of H. M. S. "Alert", 1884, p. 265.

One specimen inhabiting a *Natica*-shell, from the coast of Queensland or of New South Wales.

This species belongs to those in which the second and third pair of legs are longitudinally striated and in which the dactylopodites of these legs are longer than the propodites. Amongst the indo-pacific species, these characters are presented, besides by *Clib. taeniatus*, by *Clib. lineatus* H. Milne Edw., *Clib. asper* H. Milne Edw., *Clib. vulgaris* Dana, *Clib. striolatus* Dana, *Clib. longitarsus* de Haan and *Clib. padavensis* de Man. I am unacquainted with the two first-named species, but specimens, preserved in spirits, belonging to the four last-named ones, are lying before me, so that I am able to indicate the principal differences by which *Clib. taeniatus* may be distinguished.

This specimen has lost the left chelipede, so that I cannot say if the two chelipedes are similar to one another or not. The differences between this species and *Clib. vulgaris* Dana are not considerable. Firstly I may remark that *Clib. taeniatus* differs from the four other species by the coloration of the cephalothorax. The anterior part of the cephalothorax of *Clib. taeniatus*, in front of the cervical suture, is namely marked with pale coloured longitudinal bands which are bordered by narrow red lines: in the four other species these bands and red lines are wanting. The median frontal tooth of *Clib. vulgaris* is a

little narrower, less enlarged and projects a little more forward than that of *Clib. taeniatus*. The fingers of the hands of *Clib. taeniatus* leave a small hiatus between them when closed, which is not the case in *Clib. vulgaris*; the dentiform tubercles, with which the upper surface of the hands is armed, are a little less numerous in the species of Quoy and Gaimard, but conical, higher and more acute. The horny margin at the end of the fingers of *Clib. vulgaris* is narrow and half as long as the fingers, but somewhat broader and shorter in *Clib. taeniatus*. The inner margin of the under surface of the arms does not present a trace of the elevated dentiform tubercle, which exists in *Clib. vulgaris* (*infraspinatus* Hilgend.). The four other pairs of legs present about the same form and structure in both species. Both species also agree very much with one another, as regards the coloration, but, as I already observed, the anterior part of the cephalothorax is marked with longitudinal bands, which are not found in *Clib. vulgaris*. Two narrow red lines run in *Clib. taeniatus* from the median frontal tooth to the cervical suture; these two lines are close together and slightly diverge backwards; quite in the middle between these lines and the lateral margins of the cephalothorax, on each side another sinuous line is observed, the lateral margins are also striated and between the lateral margins and the submedian lines another red band exists, which posteriorly is divided in two lines. The eye-peduncles are marked with a red longitudinal line in both species. The anterior legs of *Clib. taeniatus* are longitudinally striated by several narrow red lines, but this is not the case in *Clib. vulgaris*. The high conical tubercles on the hands of *Clib. taeniatus* are white and contrast strongly with the ground-colour of the palm. The legs of the second and of the third pair present a similar system of coloration in both species and they are also equally hairy.

Clib. padavensis de Man, from the Mergui Archipelago, may be recognized at first sight by the structure of the

anterior legs, the high, acute, conical tubercles of *Clib. taeniatus* wanting entirely in this species; the palm presents only a few small spinules along the inner margin of its upper surface, but is covered, for the rest, only with some small piliferous lines. The cephalothorax, like that of *Clib. vulgaris*, is never marked with red longitudinal lines, but the chelipedes are striated. The legs of the second and of the third pair present about the same system of coloration in *Clib. taeniatus* and in *Clib. padavensis*.

The two last-named species, *Clib. striolatus* Dana and *Clib. longitarsus* de Haan, are much more hairy than *Clib. taeniatus*. The anterior part of the cephalothorax of *Clib. striolatus* in front of the cervical suture, is more quadrate and comparatively shorter than that of *Clib. taeniatus*; the V-shaped groove, which defines the gastric region posteriorly, is a little more distinct and this part of the cephalothorax is slightly more punctate. The hands are covered with smaller and feebler, dentiform tubercles, the colour of which does not strongly contrast with the ground-colour of the hands. The anterior part of the cephalothorax is marked with some symmetrical red spots, but the longitudinal lines, proper to *Clib. taeniatus* are not found. All the legs are marked in both species with longitudinal lines, the anterior as well as the others, but these lines are of a pink colour in *Clib. striolatus* (in specimens preserved in spirits), less numerous and somewhat differently arranged. Thus e. g. the meropodites of the legs of the third pair of *Clib. taeniatus* are striated on their outer surface, including the two margins, by six red longitudinal lines, four of which run by two and two along the outer surface; in *Clib. striolatus* these meropodites are marked only with three lines, which are widened a little towards the distal end. The outer surface of the carpopodites of these legs presents likewise two pairs of narrow red lines, but in *Clib. striolatus* only two lines are observed, which are more distant from one another and the lower of which is much broader than the upper one.

Clib. longitarsus de Haan finally is more densely hairy and the hairs are much longer. The hands of the male are slightly unequal, and scarcely so are those of the female. The hands of this species are covered on the palm only with flattened, hairy, little prominent granules, like the wrist and the arm, and a few small and acute spines are only observed on the inner margin and on the fingers; these spines are, however, comparatively smaller than those of *Clib. taeniatus*, olive-green and never white. The V-shaped groove on the anterior part of the cephalothorax is distinct, but rather indistinct in *Clib. taeniatus*. In specimens of *Clib. longitarsus*, preserved in spirits, the anterior part of the cephalothorax and the legs are dark olivegreen, sometimes with a reddish tint. The ground-colour of *Clib. taeniatus*, on the contrary, is a pale yellowish red. The cephalothorax and the chelipedes of *Clib. longitarsus* are not marked with longitudinal lines and the legs of the second and third pair agree more closely with *Clib. striolatus*, as regards the coloration, and they present a fine blue longitudinal band on the middle of the outer surface of the joints.

39. *Alpheus pachychirus* Stimpson. (Pl. 6, fig. 14).

Alpheus pachychirus, Stimpson, Proc. of Acad. of Natural Sciences of Philadelphia, 1860, p. 30.

Two young specimens from Tahiti, a male and a female, the latter ova-bearing, are in the Collection. These two individuals do not fully agree with Stimpson's description, but the slight differences are to be ascribed to their younger age. This species indeed, according to Stimpson, attains a length of 25 mm., but our two specimens, at least the male, only measure two thirds of that length. The anterior margin (fig. 14) of the cephalothorax is rather broad and appears at first sight truncate and entire; when examined by a magnifying glass of sufficient power, one observes, however, that the upper surface of the cephalo-

thorax is slightly carinated between the eyes. This slight carina projects as an excessively small point beyond the anterior margin of the cephalothorax; this point is so small, that it is observed, at least in these young individuals, only when examined by a rather strong magnifying-glass. The dorsal interocular carina disappears backward, before reaching the level of the posterior margin of the eyes. This species therefore is in fact provided with a rostrum, as minute as it is, and is closely allied to *Alpheus crinitus* Dana. The eyes project rather much laterally, are rounded and are not armed anteriorly with a tooth or an acute point.

The first and the third joints of the peduncle of the inner antennae have about the same length, whereas the second joint is almost twice as long. According to Stimpson, the second joint is but little longer than the first. This slight difference is certainly to be ascribed to the not quite adult stage of these specimens (confer: de Man, in Archiv f. Naturgeschichte, Jahrg. 53, p. 500, where I described an analogous fact in *Alpheus gracilipes* Stimpson). The external flagellum is a little longer than the peduncle and about half as long as the internal one, which is a little thinner. The basal spine is very short and scarcely projects beyond the middle of the first joint of the peduncle. The peduncle of the outer antennae is a little longer than the peduncle of the internal antennae; the basal joint is unarmed, presenting no basal spine. The scale is short, much shorter than the peduncle and reaches to the distal end of the second joint of the antennular peduncle; the spine into which the lateral margin of the scale terminates, is rather long and projects a little beyond the distal end of the scale. The flagella of the outer antennae are about as long as the animal.

The external maxillipedes project about as far forward as the peduncle of the outer antennae; the terminal joint is ovate, about three times as long as broad, and has its external surface slightly concave and the margins or-

namented with rather long ciliae. The penultimate joint is only half as long as the terminal. In the male the larger chelipede is found on the right side, in the female on the left. The meropodite of the larger chelipede of the male is strongly compressed, the inner surface is even slightly concave. The wrist is short, rounded. The larger hand is a little extroverse. The palm is cylindrical, scarcely a little compressed, and but little higher than broad; it is rounded on the upper as well as on the lower margin, smooth, without notches, and unarmed. The fingers are considerably shorter than the palm, their horizontal length being in proportion to the length of the palm as 3:5. The upper margin of the mobile finger is arcuate and this finger presents the same form as in the allied species. The rounded inferior margin of the chela is somewhat hairy, as also a part of the upper margin, and the fingers are also hairy. The hand of the smaller chelipede is much shorter than the other, scarcely half as long: like the other, it is a little extroverse. The fingers are a little shorter than the palm. The upper margin of the mobile finger is somewhat dilated, and has an acute point. The inner side of this chela is also somewhat hairy.

The larger hand of the female resembles that of the male, but the fingers are a little shorter than half the length of the palm and this hand appears to be less hairy. The other chela is small and shorter than half the length of the larger hand; the fingers are, as in the male, somewhat shorter than the palm, the mobile finger, however, is not enlarged above, and palm and fingers are hairy on the inner side.

Stimpson describes the fingers of the larger hand as shorter than half the length of the palm: as I observed, this is not the case in the male specimen, but the female agrees with Stimpson's definition. The smaller hand of the male is described by Stimpson as presenting half the size of the larger, »valde robusta, digitis palma non bre-

vioribus", these characters are not present in the male, but the smaller hand of the female agrees better with the original description.

As regards their length, the five joints of the carpus of the second pair of legs are in proportion to one another as 3:2:1:1:2; the first joint the longest, the second as long as the terminal, the third and the fourth the shortest. The hand has about the same length as the fifth joint of the carpus and the fingers are slightly longer than the palm.

The three posterior pairs of legs are short and gradually decrease in length and thickness. The meropodites of the legs of the third pair are armed with an acute tooth at the distal end of their inferior margin; those of the fourth pair are also toothed, but this tooth is exceedingly small and easily overlooked. The terminal postabdominal segment is flattened above and armed with two pairs of small spinules in the middle, quite near the lateral margins.

The male is 17 mm. in length, the female 19 mm. from the anterior margin of the cephalothorax to the end of the telson. According to Stimpson, *Alpheus pachychirus* attains however a length of 25 mm.

The indo-pacific species, to which *A. pachychirus* Stimpson is most closely allied, are *A. crinitus* Dana, *A. frontalis* H. M. Edw. and *A. latifrons* A. Milne Edw.

A. crinitus Dana differs by its rostrum of ordinary length, by the two terminal joints of the external maxillipedes being more elongate, by the structure of the carpus of the second pair of legs, the second joint of which is the longest etc.

A. frontalis H. Milne Edw., which occurs in the seas of Australia, is also closely allied, but the anterior margin of the cephalothorax projects more forward, the eyes are more prominent and the external maxillipedes are shorter and less slender.

A. latifrons A. Milne Edw. finally (fig. 15), of which

I have a female specimen from Amboina before me, may be distinguished by the following characters. The anterior margin of the cephalothorax is entire, without even a trace of a rostrum, the eyes are still much more prominent laterally and the inferior margin of the meropodites of the third pair of legs presents no tooth at its distal end. I have shown, two years ago ¹⁾, that the smaller hand of *A. latifrons* presents a somewhat different structure in young males and in the adult: in the latter the fingers are quite as long as the palm, and the mobile finger is much enlarged, in the young males, on the contrary, the palm is distinctly longer than the fingers, and the mobile finger is only very slightly enlarged. The male specimen from Tahiti now presents quite the same differences when we compare it with the adult individual, described by Stimpson.

A. pachychirus Stimpson inhabits the Loo Choo Islands and Tahiti.

Hetairocaris, nov. gen.

A new genus of the Hippolytidae.

The rostrum is short, slender, dentate above; its lower margin is entire and it arises from the anterior fifth part of the cephalothorax. On each side of the rostrum a supraorbital and one single antennal tooth; the fronto-lateral angle of the cephalothorax is rounded. The eye-peduncles are short and thick, the cornea occupies about half the length of the eye-peduncles. The first joint of the peduncle of the inner antennae is somewhat concave above, and the basal spine reaches to the distal margin of the joint. The two following joints are shorter, subcylindrical; the terminal joint supports two short flagella, the external of which is the shorter and much more robust one. The basal joint of the antennal peduncle is armed

1) Archiv f. Naturgeschichte, Jahrg. 53, 1888, p. 524.

with two short spines on the anterior margin of its external surface. The flagella are about as long as or a little longer than the body. Outer foot-jaws elongate. First pair of legs short, stout and equal. Carpopodite short, conical, deeply excavate at its distal extremity. Legs of the second pair slender; carpopodite seven-articulate, with the joints nearly equal in length. Posterior three pairs rather short and stout.

As Stimpson, and lately also Spence Bate, has established several new genera for the species of the old genus *Hippolyte*, I am obliged to create also a new genus for the new species I have to describe. *Hetairocaris* is most closely allied to the genus *Hetairus* Sp. Bate. Both genera present a supraorbital and an antennal tooth on the fronto-lateral surface of the cephalothorax and in both the carpus of the second pair of legs is seven-articulate. In the new genus, however, the carpus of the first pair of legs is short and deeply excavate, quite as in *Hippolyte* s. s. Sp. Bate, the lower margin of the rostrum is entire and the fronto-lateral angle of the cephalothorax is rounded; the outer maxillipedes are also more elongate. The genus *Hippolyte*, as restricted in the beautiful Report on the Challenger Macrura, is armed, like *Hetairocaris*, with a supraorbital tooth, and the carpus of the first pair of legs is also short and deeply excavated, but the carpus of the second pair is triarticulate, the external maxillipedes are shorter, and two antennal teeth seem to occur in this group on the fronto-lateral surface of the cephalothorax.

The genus *Hetairocaris* represents the Atlantic genus *Hetairus* in the Pacific Ocean.¹⁾

1) Spence Bate thought that the Japanese *Hippolyte rectirostris* Stimps., a species which is closely allied to *Hetairus Gaimardi*, ought to be referred to the genus *Hetairus*, but I may observe that Stimpson makes no mention of the existence of a supraorbital tooth, which, however, is characteristic of the genus *Hetairus*.

40. *Hetairocaris orientalis*, n. sp.

(Pl. 6, fig. 16).

Two ova-bearing females from the island of Ponapé.

This species much resembles in its outer appearance *Hippolyte brevirostris* Dana from the West-coast of North America. The cephalothorax is rounded above and smooth. The short, slender rostrum is laterally compressed and arises with a carina from the anterior fifth part of the cephalothorax; it is directed horizontally forward and does not reach to the distal end of the first joint of the peduncle of the inner antennae. The upper margin is armed with four acute equal teeth, placed on equal distances; the two posterior teeth are placed on the cephalothorax, the two anterior on the rostrum itself. The lower margin is straight and entire. On each side of the second tooth of the rostrum the supraorbital tooth is placed; these supra-orbital teeth are about twice as large as the teeth of the rostrum; they do not reach to the extremity of the third tooth of the rostrum in the larger specimen, whereas they reach to it in the smaller one. The antennal tooth is small, and only half as long as the supra-orbital one; there is no second antennal tooth, and the fronto-lateral angle is rounded.

In both specimens the abdomen is deflexed towards the ventral side. The lateral margins of the antepenultimate segment terminate in an acute tooth, and the posterior margin presents a second tooth which is smaller and less acute, on each side of the middle line, close to the lateral teeth. The penultimate segment is but little longer than the antepenultimate; the lateral margins terminate in an acute tooth and the posterior margin presents two other teeth which are as acute as the lateral. In the species of the genus *Hetairus* figured by Spence Bate, this segment, on the contrary, is considerably longer than the antepenultimate one. All the postabdominal segments are rounded above and smooth, except the telson. The telson

is a little shorter than the two preceding segments taken together, and a little more than once and a half as long as the penultimate segment. The terminal segment is slightly longitudinally concave in the middle and presents two pairs of spinules on the posterior half of the upper surface near the lateral margins. The posterior margin of the telson is armed with a short median, immobile spine in the middle, on each side of which two mobile spines are found; of these spines the inner one is four times as long as the outer, the latter being about of the same size as the median spine. The lateral margins and the posterior margin are ciliate. The uropoda are a little longer than the terminal postabdominal segment, and their basal portions are armed with two small spines above, the outer of which is the larger one.

The eye-peduncles, the half of which is occupied by the cornea, are short and thick and as long as the rostrum. The first joint of the peduncle of the inner antennae is a little longer than the rostrum, and its upper surface is somewhat enlarged and excavated; the slender and acute basal spine reaches the distal end of this joint. The two following joints are short, subcylindrical and together still a little shorter than the first; the penultimate joint is slightly longer than the terminal one. The joints of the antennular peduncle present no spine at their distal extremity, but they are perhaps armed with a few microscopical spinules. The two flagella have the same form as in the genus *Hetairus*; the external one is stout and robust and about as long as the peduncle, but the internal one is slender and thin and twice as long. The peduncle of the external antennae is slightly longer than the antennular peduncle; the basal joint presents two short spines on the anterior margin of its outer side, the lower of which is a little longer than the upper one. The antennal scale is a little longer than the peduncle, and its external margin terminates in a small spinule. The flagella are a little longer than the body.

The external maxillipedes are elongate and project with

their terminal joint beyond the scale of the outer antennae; their penultimate joint is about half as long as the terminal one, and the latter is armed at its distal end with four or five small spinules.

The legs of the first pair extend to the distal end of the antennal scale. The wrist is short, conical, deeply excavated at its distal extremity and covered on its upper surface with a few microscopical spinules. The hands are nearly twice as long as the wrist, the palm slightly longer than the carpus, subterete and rounded, the fingers much shorter than the palm.

The slender legs of the second pair extend a little beyond the antennal scale. The carpus is seven-articulate, the joints presenting at first sight almost the same length. The first or proximal joint, however, is slightly longer than the second, the second a little longer than the third; the third, fourth, fifth and sixth are equal in length, the terminal joint, finally, is again a little longer and as long as the first. The hand is about as long as the two terminal joints of the wrist together, and the palm longer than the fingers.

The three posterior pairs of legs have the ordinary form. The third pair is as long as the second, the following are shorter, the legs of the fifth pair extending only to the distal extremity of the carpus of the first pair.

The larger specimen measures about 40 mm. from the tip of the rostrum to the extremity of the terminal postabdominal segment.

41. *Penaeus Macleayi* Haswell.

Penaeus Macleayi, Haswell, Catalogue of Australian Crustacea, 1882, p. 201.

Two specimens from Sidney.

Whilst this species attains a length of five inches, these two specimens measure scarcely three inches, and I ascribe to this smaller size the fact that the legs are comparatively a little shorter than in the type. According to Haswell, the legs

of the first pair are indeed as long as the antennary scale: in our specimens they reach scarcely to the distal end of the peduncle of the outer antennae. The second pair of legs project with the hands beyond the distal end of the antennal peduncle, but they are still considerably shorter than the antennal scale. The third pair, however, extends with the fingers beyond the antennal scale. The legs of the fourth pair are much shorter than those of the third, and reach scarcely a little more forward than the first pair. The legs of the fifth pair are much longer, they reach nearly as far forward as the antennal scale, but they are still shorter than the legs of the third pair. The three anterior pairs of legs are unispinose at their base. I observe a very small supraorbital spine, which is not mentioned by Haswell; this spinule, however, is very small and disappears probably in the adult. For the rest these two specimens agree perfectly well with Haswell's description. This species is closely allied to *Penaeus avirostris* Dana from Singapore. In Dana's species the teeth of the rostrum extend less far forward, so that the styliform distal end occupies more than half the length of the rostrum; in *Penaeus Macleayi*, however, the styliform unarmed part is shorter than half the length of the rostrum. In Haswell's species five teeth are placed on the rostrum itself and only two on the cephalothorax, in *Penaeus avirostris* Dana two on the rostrum and four on the cephalothorax. The rostrum of *Penaeus Macleayi* is also less elevated at its base than in the species of Singapore.

Middelburg, February 1890.

EXPLANATION OF THE PLATES.

PLATE 3.

- Fig. 1. Right or larger hand of the male of *Xantho punctatus* II. Milne Edw., $\times \frac{3}{2}$.
 " 2. Larger hand of the male of *Heteropanope serratifrons* Kinahan, $\times 3$.
 " 3. Larger hand of the female of *Pilumnus globosus* Dana, $\times 2$.
 " 4. *Pilumnus takitensis*, n. sp., male, $\times 2$; fig. 4a, a part of the under side of a female of the same species, $\times 6$; fig. 4b, larger hand of the female, $\times 4$.
 " 5. Front-orbital region of the male of *Xenophthalmodes Moebii* Richters, $\times 10$, showing the minute corneae; fig. 5a, outer foot-jaw, $\times 5$; fig. 5b, abdomen of the male, $\times 5$.

PLATE 4.

- " 6. Cephalothorax of a male of *Geryon trispinosus* Herbst, $\frac{1}{5}$ of natural size; fig. 6a, inferior view of the front-orbital region, nat. size; fig. 6b, anterolateral margin, nat. size; fig. 6c, outer foot-jaw, nat. size; fig. 6d, three last joints of the male abdomen, $\times 1\frac{1}{2}$.
 " 7. Hand of the male of *Macrophthalmus crassipes* H. Milne Edw., type specimen of the Paris Museum, $\times 2$; fig. 7a, hand of the male specimen from the Carolines, $\times 2$, in which the fingers are a little more deflexed and the hiatus between them a little wider.
 " 8. Hand of a male of *Macrophthalmus carinimanus* Latr. from Celebes, $\times 2$.
 " 9. Hand of a male of *Macrophthalmus dilatatus* de Haan, type specimen from Japan, belonging to the Leyden Museum, $\times 2$.
 " 10. Hand of the male of *Macrophthalmus pacificus* Dana, $\times 2$.

PLATE 5.

- " 11. Male of *Pachygrapsus crassipes* Randall, from the Gulf of California, $\times \frac{4}{3}$.

PLATE 6.

- " 12. Hand of the male of *Sesarma bataviana*, n. sp., $\times 3$; fig. 12a, upper surface of the palm, showing the parallel pectinated ridges, $\times 3$.
 " 13. Outer view of the hand of the male of *Sesarma barbimana*, n. sp., $\times 3$; fig. 13a, upper surface of the hand, $\times 3$.
 " 14. Frontal region and antennae of a female of *Alpheus pachychirus* Stimpson, showing the minute rostrum, $\times 8$.
 " 15. Frontal region and antennae of *Alpheus latifrons* A. Milne Edw., female from Amboina, $\times 8$.
 " 16. *Hetairocaris orientalis*, nov. gen., n. sp, female, $\times 3$; fig. 16a, lateral view of the rostrum and the eye, female, $\times 6$; fig. 16b, anterior leg of the female, $\times 6$; fig. 16c, leg of the second pair, female, $\times 6$. (The fourth pair of legs has not been figured).

NOTE XIV.

DESCRIPTIONS OF TWO NEW SPECIES OF
ASIATIC CETONIIDAE.

BY

Oliver E. JANSON.*Cosmiomorpha decliva*, n. sp.

Pale yellowish testaceous, shining; the head, a very fine marginal line and a large ill-defined discoidal patch on the thorax, the scutellum and a narrow basal and sutural margin to the elytra pitchy black; a small indistinct spot on the clypeus and the antennae reddish, first joint of the latter pitchy; the upperside with very fine yellowish grey setae in the punctures; beneath densely covered with long yellowish grey setae at the sides; the margins of the thoracic segments, centre of the metasternum, margins of the femora, the tips of the tibiae and tarsal joints and the claws black or pitchy.

Head closely punctured, a small central carina at the base smooth, impressed and with the punctures confluent between the eyes; clypeus elongate, a little narrowed in front, the sides strongly raised, the apex strongly emarginate in the centre with the angles reflexed and slightly produced outwardly. Thorax strongly deflexed in front, finely and densely punctured, the punctures becoming confluent towards the sides, a slight median line at the base smooth, emarginate and a little reflexed at the sides behind the middle, the basal angles rounded. Elytra closely covered with fine o-shaped punctures on the disk, the sutural margin and two narrow discal costae smooth, the sides and apex finely strigose, slightly emarginate at the apical angles with the suture a little produced. Pygidium finely strigose, dull, with coarse grey setae. Metasternum smooth with an impressed median line, the mesosternal

process long, narrowed and obtuse at the apex. Legs strigose and with sparse setae, anterior tibiae long and curved, finely denticulate inside and with two slight marginal teeth on the outer side, anterior tarsi nearly twice the length of the tibiae, the first joint strongly produced at the apex beneath.

In the female the clypeus is shorter and broader with the angles less prominent, the thorax is smaller, much less deflexed in front and more regularly rounded at the sides, the legs are altogether shorter and stouter, the anterior tibiae have two very large external teeth and the internal denticulation almost obsolete. — Length 20—21 mm.

Hab. Foo-chow, S. E. China.

This species is closely allied to *C. modesta* Saund., but, besides the difference in coloration, the setae on the upper surface are much finer and more sparse, the clypeus is longer, narrower and more strongly emarginate at the apex and in the male the apical angles are more prominent, this sex differs moreover from *modesta* in having the thorax less convex and much more strongly deflexed in front. The male and female in my collection are the only specimens I have seen, in the latter the black thoracic patch is much larger than in the male and extends to the lateral margins in the middle and at the base and apex so that only two spots of the ground colour remain on each side, the black basal and sutural borders on the elytra are also broader and there is no spot on the clypeus.

Gnorimus costipennis, n. sp.

Elongate, convex, brassy green, shining, apex of the clypeus and the pygidium coppery green, underside and the femora coppery black, tibiae and tarsi black, antennae and the palpi reddish. Head closely and rather coarsely punctured, clypeus more sparsely punctured in front, the apex rounded and deeply notched in the centre, the margins a little thickened. Thorax moderately convex, nearly one fourth broader in the middle than long, a little

rounded at the sides, gently narrowed in front from the middle and slightly narrowed behind, the basal margin impressed and slightly sinuous on each side, nearly straight in front of the scutellum, rather coarsely and closely punctured, with a narrow smooth median line, strigose towards the anterior angles, the sides with a marginal band of pale golden hairs. Scutellum broad, nearly semi-circular, with a few scattered punctures. Elytra broadest behind the middle, rounded at the apex, each with six deep unevenly punctured striae on the disk, the outer one shorter and shallower than the others, the interstices convex and sparsely punctured, the sides and apex closely and irregularly strigose. Pygidium finely strigose, a spot at the apex and three smaller ones placed transversely in the middle of pale golden hairs; the penultimate dorsal segment punctured, densely clothed with pale golden hairs and with a narrow smooth median line. Underside strigose and clothed with long pale golden hairs; mesosternal process short and compressed; abdomen with a broad punctured and pubescent central impression, a narrow space on each side smooth and shining, the apical segment finely and sparsely punctured. Legs coarsely punctured, the femora pubescent, anterior tibiae with a slight indication of a lateral tooth.

The female is rather broader than the male and has the apex of the pygidium covered with small tubercles and without hairs, the abdomen is convex and smooth in the centre and the anterior tibiae are furnished with an acute lateral tooth. — Length 21—23 mm.

Hab. N. Manipur, Assam (5000 to 8500 ft. elevation).

This fine and very distinct species differs from all others of the genus in its robust and convex form, strongly costate elytra and deeply notched labium, the thorax is also narrower and scarcely lobed at the base, the intermediate tibiae are but slightly curved in the male and the club of the antennae is of the same size in the two sexes.

NOTE XV.

ON UNRECORDED VARIETIES OF COPTENGIS
SHEPPARDI, CROTCH AND OF C. PASCOII, CROTCH.

BY

the Rev. H. S. GORHAM.

There are in the Leyden Museum eleven specimens of a *Coptengis* which in all respects agrees with *C. sheppardi* except that the thorax and elytra are wholly unspotted, one might have thought that these, which are all from Morotai (Bernstein), would prove to be a distinct species; and I believe in fact it are similar specimens which have been so described by Crotch, as *C. wallacii*, but his collection is not now with me, and I cannot speak with certainty of this. That these are only varieties is confirmed by the fact that I have *C. sheppardi*, in which the two hinder spots are wanting and that I find it variable as regards the thoracic spots.

But what is more remarkable is that from the same collection (Morotai, Bernstein) are four specimens which I cannot separate from *C. pascoii* Crotch except by the unspotted elytra. And on studying these two species, I cannot find any structural difference whatever, that is constant, the difference between them being a colour one of the legs alone, that of the body and elytra being evidently variable and local. It is, however, to be observed that the colour of the legs is so very constant in Erotylidae, that I am far from asserting that these two forms are not specifically distinct, on the contrary I think them to be so.

NOTE XVI.

DESCRIPTION OF A NEW GOLIATHID FROM
THE CAMEROONS.

BY

J. R. H. NEERVOORT van de POLL.*Goliathinus aureo-sparsus* v. d. Poll.

♀. *Brunneo-niger*, nitidus; *plaga basalis prothoracis*, *scutellum elytraque* (*humeri excepti*) *tomento brunneo-olivaceo oblecta*. *Prothorax* *lateraliter* *marginē angustā et ab angulis anticis lineā obliquā*, *scutellum lateraliter vitta latā*, *elytra omnino maculis et atomis* (*quae maculae ad margines majores*) *aureis ornata*. *Caput* *scabrose reticulato-punctatum*; *clypeus in medio reflexus et nonnihil truncatus*, *lateraliter gradatim rotundatus*. *Prothorax antice in tuberculum validum productus*, *lateribus fere in medio angulariter dilatatis*, *lobo postico ante scutellum truncato*; *postice sat convexus*, *antice multo reflexus et in medio late sed haud profunde excavatus*, *in depressione et ad margines laterales fortiter strigoso-punctatus*, *supra et ad basin punctis grossis sparsim instructus*. *Scutellum elongato-triangulare*, *apice obtuso*. *Elytra gradatim angustata*, *ad apicem rotundato-truncata*, *minutissime punctata*, *costis suturalibus ab medio sat elevatis*. *Pygidium dense subtiliterque rugosum*, *rufo-pilosum*. *Subtus*, *latera sternorum abdominisque et segmenta duo ultima tota dense strigoso-punctata*, *rufo-pilosa*. *Processus mesosternalis obtuse productus*. *Femora tibiaeque fortiter punctatae*; *tibiae anticae*

extus in dentes duos validos acutos productae, tibiae intermediae et posticae intus longe denseque nigro-pilosae.

Long. 50 mm., lat. 25 mm.

Habitat: Barombi, Cameroons (W. Africa).

Nitid black with brownish and olivaceous shades; the elytra, with exception of the glabrous shoulders, and the scutellum clothed with a brownish olivaceous tomentum, interrupted on the elytra by numerous small, partly punctiform golden spots, these spots are largest along the outer-margins and almost absent around the scutellum, the depressed sides of the scutellum are entirely occupied by a golden stripe. The prothorax also shows a tomentose patch just in face of the scutellum, its extension is likely to be very variable, in this specimen it emits a tomentose line forwards and there are on each side traces of an other patch. Moreover the thorax is ornated with a golden line just along the lateral margins (broadly interrupted in our specimen) and an other oblique discal line originating at the front angles, where it is confluent with the marginal line, and extending in an oblique direction outwards up to about the middle; in our exponent this line is also largely interrupted, its terminus being only indicated by a punctiform spot, higher on in the prolongation of the line.

Head very strongly and roughly punctured; sides of the clypeus gently rounded towards the front margin, which is rather strongly elevated and truncated in a slightly curved line. The reflexed front part finely and densely punctured.

Prothorax moderately convex, the anterior half strongly reflexed and broadly but not very deeply excavated in the middle, the lateral margins with a distinct narrow rim; the front margin deeply bisinuate, much produced in the middle, forming a large pointed glabrous tubercle, the sides angularly dilated about the middle and narrowed towards the base and the front (much more strongly towards the latter) in almost straight lines, the basal lobe

strongly produced over the scutellum; the upper basal portion distantly punctured, the punctures almost absent in the centre and becoming larger and more numerous near the sides, which, as well as the reflexed front portion and the median excavation, are very closely, confluent and roughly punctured and strigose.

Scutellum elongate-triangular, rounded at the tip.

Elytra gradually slightly narrowed towards the tip, where they are broadly rounded and truncated, the sutural costae rather strongly elevated behind the middle; closely but very minutely punctured all over.

Pygidium opaque, finely but very thickly rugosely punctured, slightly longitudinally impressed in the middle, clothed with long soft brownish hairs.

Underneath with the sides of the sterna and abdominal segments as well as the whole of the two ultimate segments finely strigosely punctured and clothed with a short brownish pile; the median portion of the breast with a few small remote punctures and in the middle with a deeply impressed strigiform pit which is prolonged forwards on the mesosternal process in a fine line; the mesosternal process produced and obtusely pointed. Legs deeply punctured, the outerside of the intermediate and hinder tibiae finely rugose, with a small tooth about the middle, the innerside of the same provided with a long and dense fringe of blackish hairs, the front tibiae with two large and acute lateral spines before the equally strongly and sharply produced terminal edge.

As for the velvety vesture of its elytra this beautiful species is allied to *G. Fornasinius* Bert., however its colour and markings as well as the structure of head and thorax are very different, the outline of both the latter being much more in accordance with those of *G. Higginsi* Westw.

In the Bulletin entomologique of the Soc. Ent. de France, Séance du 10 août 1887, p. cxxxv, mention is made of a ♀ specimen of a new Goliathid from the San-Benito, which Mr. Künckel d'Herculais intended to de-

scribe and figure in the »Annales» under the name of *Goliathinus Guirali*. As the San-Benito River is close to the locality where my new species was taken, it is not impossible that Mr. Künckel's species will prove to be identical with my *aureo-sparsus*, but I have been unable to detect any published description or diagnosis of his *G. Guirali*.

I have described this species under the generic title of *Goliathinus* and not under that of *Fornasinius* used by von Harold and Bates. Von Harold's views of the priority should be quite correct if Bertoloni only had proposed a generic name without changing the specific name, but to raise a specific name to the rank of a generic one with addition of a new specific name, I consider inadmissible. Whilst generic names are accepted or rejected according to the personal views of different authors, the specific name is the only stable base we have, therefore no such name once published ought to be changed without the utmost necessity. If the partisans of absolute priority should like to retain in this case the generic name proposed by Bertoloni, they must retain also the original specific name and call the insect *Fornasinius Fornasinii* Bert.

A splendid series of cacographic and erroneous quotations concerning this subject, may be found in Bergé's *Enumération des Cétonides décrits depuis la publication du Catalogue de MM. Gemminger & de Harold*.

NOTE XVII.

DESCRIPTION OF THREE NEW SPECIES OF
MALAYAN LONGICORNIA.

BY

C. RITSEMA Cz.

Eurybatus inexpectatus, nov. spec.

This species is closely allied to *Eurybatus novempunctatus* Westw. ¹⁾, but easily distinguished by the different armature of the antennae, these having not only the 3rd—5th joints spined at the end, but the 6th joint too is provided with a spine which, *inter alia*, is more distinct than that on the 5th joint in *novempunctatus*.

As regards the coloration it agrees with *novempunctatus*, but the pronotum is unspotted and the tubercle which in *novempunctatus* proceeds from the lateral black spots is entirely wanting; the four anterior elytral spots are rather small and round, the two posterior ones large and transverse, rather narrowly separated at the suture but reaching the thickened lateral margins; moreover the apical margins are broadly bordered with black; underneath the distribution of the colours is exactly the same as in *novempunctatus*.

The punctuation of the head is considerably finer and wider apart than in the allied species, and the sculpture on the scape of the antennae less rugose; the 3rd and 4th joints of the antennae are straight, the 3rd—6th joints armed at the end with an acute spine which is strongly

1) Westwood, Cabinet of Oriental Entomology. p. 59; pl. 29, fig. 3, and
Lameere, Annales de la Société Entomologique de Belgique. Tome XXXI. p.
169; pl. 3, fig. 8 and 8a.

curved in a sense directed towards the tip of the antennae; the spine on the apex of the 3rd joint is the longest and curved only at the tip; the scutellum is narrowed behind and almost inconspicuously notched at the tip. — Length from the tip of the mandibles to the end of the elytra 29 mm., that of the antennae 45 mm.

Hab. Mt. Kawi, Pasoeroean Residency: East Java, at an elevation of 2500—4000 feet above the level of the sea. — A single male specimen (W. C. Thieme).

Noëmia apicicornis, nov. spec.

Allied to and strongly resembling *Noëmia flavicornis* Pasc.¹⁾ from which it may, however, be distinguished at a glance by the differently coloured antennae, these being pale brown with the apical third white and the extreme tip black.

Length $9\frac{1}{2}$ —11 mm. — Of a deep blue, more or less tinted with green especially on the elytra, the legs darker; the parts of the mouth (the labrum and front margin of the clypeus included) pale brown, the apical joint of the maxillary palpi and the tip of the mandibles dark brown; the seven basal joints of the antennae pale brown, the sixth and seventh joint darker towards the end, the four apical joints white²⁾, the tip of the eleventh joint blackish; the trochanters and base of femora pale yellowish, the end of the tibiae and the tarsi pitchy. The whole insect sparingly beset with long erect pale coloured hairs, the under surface sericeous with the exception of the head, front portion of the prothorax and the middle portion of the metasternum.

The head smooth and shining, provided with a few deeply impressed punctures, the clypeus, however, opaque,

1) Trans. Ent. Soc. London. New ser. vol. IV, p. 111; pl. 22, fig. 8, and 3rd ser. vol. III, p. 657.

2) One of my two female specimens has the basal half of the eighth joint dark brown. In this specimen the antennae appear moreover to be somewhat thicker and shorter, and the whole insect is somewhat more robust than the other female. I failed, however, to find other distinctive characteristics.

densely punctured and hairy; the thorax above glossy, with a few large punctures on the disk and very delicately wrinkled anteriorly and behind; the lateral spines short and blunt. The scutellum broadly truncate with rounded angles, somewhat sericeous. The elytra strongly and closely punctate-striate, the punctures, however, become obsolete on the apical portion; the apices subtruncate with rounded angles. The legs very sparingly, the abdomen densely but delicately punctured.

In the male the apical joint of the maxillary palpi is securiform, the mesosternum armed, just within the intermediate coxae, with two perpendicular pale coloured spines, the trochanters of the hind legs prolonged backwards so as to form an acute tooth, and the femora of the same pair of legs provided along the hinder side of the apical half with a wide and deep sharply edged furrow.

Of this species the Leyden Museum received two males and two females (about one of the latter see my observation in the second footnote) from Dr. B. Hagen, by whom they were captured in the district of Serdang (North East Sumatra).

No species seem to have been described in this genus besides those recorded in the Munich Catalogue. The genus *Psalanta* (founded by Pascoe on his *Noëmia chalybeata*) no doubt ought to be maintained.

P h e m o n e c o r d i g e r, nov. spec.

The specimen which has served for the following description was, in 1883, sent back to our Museum by Mr. Pascoe as a »nova species'', and as since that time no species have been recorded in the genus *Phemone* I venture to describe it under the above name.

Length 12 mm. — Resembling *Phemone frenata* Pasc. (Trans. Ent. Soc. London. New Ser. Vol. V, pl. 2, fig. 5, ♂) in its white markings, but the general colour of the upper surface is greyish black owing to a delicate pile, and is va-

riegated on the elytra with numerous small dots of a greyish white pubescence.

The face and cheeks are covered with a yellowish grey pubescence which gradually becomes blackish towards the vertex and hides the sculpture with the exception of a fine mesial line which is smooth and extends up to the front-margin of the thorax. The antennae are about of the length of the body; the four basal joints are thicker than the seven apical joints and contrast strongly with them; the thick joints have a fringe of black hairs on the underside and are densely covered with a pubescence which is grey on the upper, black or blackish on the underside of the three basal joints; on the fourth joint, the apical half of which is slightly swollen, the pubescence is black with the exception of a ring of grey pubescence at the base; the seven apical joints are almost glabrous and of a testaceous brown colour. The scape is as long as the second and third joint taken together, the fourth joint is distinctly shorter than the third, the fifth about two-thirds of the fourth, the succeeding joints almost inconspicuously decreasing in length.

The thorax shows irregular transverse wrinkles intermixed with some deeply impressed punctures, and has just within the origin of the two divergent white lines which are the continuation of the white \wedge -shaped figure on the vertex of the head, two very fine nearly parallel white lines along the middle not fully extending to the base of the thorax.

The straight divergent white thoracical lines are continued in slightly curved lines down to the middle of the elytra where they end in a transverse angular white line which makes part of a line that surrounds a broadly heartshaped space occupying the total width of the elytra but not extending to the apex; the suture is narrowly margined with white, and the elytra are variegated with small dots of a greyish pubescence, more sparsely, however, on the heartshaped space. The elytra are

moreover provided with deeply impressed punctures, which, however, become evanescent on the heartshaped space.

The under surface is covered with a greyish pile, and the thorax shows laterally a white line which extends along its whole length; the apical margin of the abdominal segments is fringed with white hairs, which decrease in length towards the middle; the 5th (apical) segment is large and convex, slightly longer than the three previous segments taken together, conical, broadly truncated in a straight line at the tip, and provided with an impressed line along the middle; the apical margin is fringed with pale ferruginous hairs. The legs are covered with a dark grey pile, more whitish, however, on the outer margin of the tibiae. The anterior tarsi are strongly dilated and blackish. The intercoxal part of the prosternum is provided with a strongly protruding tubercle.

Hab. Sumatra (S. Müller). — A single female specimen.

NOTE XVIII.

FINAL REMARK ON
DOLICHOPROSOPUS MACULATUS, RITS.

BY

J. R. H. NEERVOORT van de POLL.

Shortly after having published my observations on the grey colored ♂ specimen of *Dolichoprosopus maculatus* Rits. from Batjan [vide Notes from the Leyden Museum, vol. XI (1889), p. 222 ¹⁾], I obtained a few male and female specimens of the typical colour from Halmaheira, which showed at once that the different colour of the covering pile is independent on the sexes and must be ascribed to a local variety.

Moreover a second specimen from Batjan strengthened this opinion, for although being in a pitiable rubbed condition, it showed just enough of the pile to state that it was of the same greyish colour.

I now propose to designate the local form from Batjan, under the name of

var. *canescens* v. d. Poll.

1) In this Note the generic name was erroneously written *Dolichoprosopis*.

NOTE XIX.

ADDITIONAL REMARKS ON
CLADOPALPUS HAGENI, LANSB.

BY

J. R. H. NEERVOORT van de POLL.

My assistant Mr. J. Z. Kannegieter, who is travelling in the Malay Archipelago, has had the good fortune, when collecting in the interior of Bedagei (Deli, East Sumatra), to obtain a ♂ and a ♀ specimen of the above named interesting Longicorn, of which as yet only two male specimens were known, one from Serdang (Deli) in the Leyden Museum collection and an other from Mount Ardjoeno (East Java) in the collection of Mr. van Lansberge which is now in Mr. Oberthür's possession.

The knowledge of the ♀ sex is the more important as it shows that the extraordinary structure of the maxillary palpi is only a character of the male sex. Nevertheless the female palpi are still very remarkable for its length and robust although ordinary structure, the last joint is elongate-triangular, and finely pubescent.

Moreover the female differs from the male in being somewhat larger and broader, chiefly its elytra, which are more strongly overreaching the hinder thighs and more broadly rounded at the tip; the prothorax is somewhat more remotely punctured and therefore more shining on the disc; the antennae are proportionally slightly shorter; the last ventral segment is broadly rounded and the whole of the under-surface finely and densely punctured, the sculpture of the underside of the male (of which no mention is made in the

description of Mr. van Lansberge) is similar but stronger.

My ♂ specimen is considerably smaller than the type measuring only 21 mm., whilst the female attains a length of 25 mm.

At the end of his description Mr. van Lansberge remarks : » L'exemplaire de Serdang est brun clair, mais comme celui de Java est noir, il est clair que la couleur brune n'est qu'occasionnelle"; the couple I now received is exactly of the same pale chestnut colour as the specimen formerly sent over from Serdang by Dr. Hagen, and I fear that Mr. van Lansberge's statement will prove to be more immature than the colour of the Sumatran species. A careful re-examination of the Javan specimen may be highly recommended.

P. S. In the meanwhile the foregoing remarks were passing through the press, I happened to examine the figures of White's Catalogue of Longicorn Coleoptera and was much surprised to find on plate II, fig. 3, a Longicorn, which directly called to mind the ♀ of *Cladopalpus*. After having carefully compared the description and figure of this insect, I have no hesitation in placing *Cladopalpus Hageni* Lansb. in synonymy with *Cyrtionops punctipennis* White. This author has already known the male sex too, but he mistook the singular structure of its palpi, for a curious difformity (vide his footnote); Lacordaire has ventured the supposition of its being a peculiarity for one of the sexes. White and Lacordaire have placed this insect among the Prionidae, whilst van Lansberge described *Cladopalpus* as a new genus of Cerambycidae (tribe of the Distenides); I consider the former view the more correct.

NOTE XX.

OBSERVATIONS RELATING
EUPETAURUS CINEREUS, OLDFIELD THOMAS.

BY

Dr. F. A. JENTINK.

March 1890.

(Plate 7, figs. 1 and 2).

Mr. Oldfield Thomas has described in the Journal of the Asiatic Society of Bengal, 1888, p. 256, a very interesting and aberrant *Pteromys*-form under the name *Eupetaurus cinereus*. He remarked that in the Leyden Museum were not improbably a melanoid and a normal example of this species. This supposition he based upon quotations by Anderson in his well known »Yunnan Expedition”.

As the species under consideration seems to be a very rare one, at least in zoological collections, it has its interest to know if the two named specimens in the Leyden Museum really belong to *E. cinereus* and — if so — how far the characteristics given by Thomas are constant.

One of our specimens, the individual presented to our Museum by Lord Walden and collected in Kashmir, certainly does not belong to *E. cinereus*, as its ears, skull and dentition prove, but probably is a melanoid form of *Pteromys albigenter* as suggested by Anderson.

The other specimen, however, said to be from Tibet, really is an *Eupetaurus cinereus*, although not an adult one like the specimen the skull of which has been figured and discussed by Oldfield Thomas, l. c. pl. XXIII. Just in the not so advanced age of our specimen lies the scientific

value of it, as — owing to the worn state of the teeth in the single available skull (Thomas' type) — it was impossible to Oldfield Thomas to say how many extra superficial grooves there may have been. The very exactly drawn figures (plate 7, figs. 1 and 2) will give a clear idea of the peculiarities of the teeth and at the same time show the form of the tympanic bullae, which were smashed in the skull of the type figured in the J. A. S. B. above mentioned.

Our specimen from Tibet agrees in size, color of the fur and peculiarities of the skull exactly with Thomas' accurate description.

The discovery of this new form among the flying squirrels anew is a proof of the acute discernment of Mr. Oldfield Thomas. It only is to be regretted that he has chosen the name *cinereus* for his new species, a specific title very easy to confound with the name *cineraceus* bestowed by Blyth on another *Pteromys*-species too from the Indian continent.

NOTE XXI.

ON A NEW FLYING SQUIRREL FROM DELI, SUMATRA.

BY

Dr. F. A. JENTINK.

March 1890.

(Plate 7, figs. 3—10).

Sciuropterus setosus, collected by Horner in the neighborhood of Padang (Sumatra) and described by Temminck in the »Fauna japonica'', seems to be such an extremely rare animal, that the type-specimen — an adult female — is the only individual hitherto observed by collectors and naturalists. Mr. Anderson is one of the few authors which have paid some interest to our little animal, but he has been not very successful in his remarks and observations. For, having studied in our Museum all our specimens before publishing his bulky work ¹⁾, he came to the remarkable conclusion that Temminck's *setosus* is a not fully grown specimen of *Sciuropterus* (*Pteromys* apud Anderson) *pearsonii* Gray.

Trouessart (Catalogue des Rongeurs, 1881) blindly accepted Anderson's view, but incorrectly gave the locality, as we find in Trouessart's Catalogue »Birmanie supér., Sikkim, Darjiling'', instead of »Sumatra''. Transiently I observe that Temminck's »Fauna japonica'' has been published in 1850, *not* in 1847, as Anderson and Trouessart quoted.

It seems that Oldfield Thomas, as in so many other points, differs with Anderson concerning the specific identity

1) Anatomical and Zoological Researches: comprising an account of the Zoological Results of the two Expeditions to Western Yunnan in 1868 and 1875, by John Anderson, 1878.

between *setosus* and *pearsonii*; at least, in the P. Z. S. L., 1886, p. 60, he says concerning the localities where *Sciuropterus pearsonii* has been found: »this rare species would »be naturally expected to occur in Manipur. It has previously been recorded from Sikkim, Assam and Yunnan". As we see, no word about Sumatra, a locality that Thomas otherwise certainly not would have omitted to record.

Let us now return to Anderson and look how he defended his view; on p. 294 of his book we read: »I have »examined the type of *Pteromys setosus*, which agrees with »*P. pearsonii* in the absence of the cheek-bristles and in »its general characters, but the specimen is not fully grown, »measuring only, along the back to the root of the tail, »4.75, and the tail 3.75. It is less rufescent than the »adult, and the underparts are whiter, as are also the »cheeks". If we now consider that, according to Anderson, in *pearsonii* the tail is half the length of the body, which attains to about 8 inches (also body ± 8 and tail ± 4 inches, meanwhile the same measurements in *setosus* are 4.75 and 3.75), that moreover the color of the upperparts in *pearsonii* is a rich glossy reddish-brown, finely grizzled with black (apud Anderson, p. 293), meanwhile in *setosus* »toutes les parties supérieures ont une teinte brune noirâtre nuancée de cendré roussâtre, vu que la pointe de tous les poils porte cette dernière teinte" (apud Temminck, p. 49), and finally that the skull of *setosus* clearly presents the worn state of the molars, I think that it need not to demonstrate on other grounds the specific difference between the two species in consideration.

It is perhaps not superfluous to add, that in *pearsonii* »the tail is very bushy but slightly distichous and is half »the length of the body" (Anderson), meanwhile in *setosus* »la queue, qui est longue et à poil distique, atteint par »le bout à l'origine des oreilles" (Temminck).

By the kindness of Oldfield Thomas, who presented to our Museum a specimen of *Sciuropterus pearsonii* with its skull, I am at present in the opportunity to compare the

skulls of the two species under consideration. Both they are adult specimens, all the molars are present.

The measurements of the skulls in millimetres run as follows:

	<i>Sc. pearsonii.</i>	<i>Sc. setosus.</i>
length of skull	41	30
greatest breadth	27	17
nasals	13.5	7
palate	20	12
diastema	9	6.5
length of upper molar series . .	10	5.5

In comparing the drawings of the skulls (plate 7, figs. 3, 4, 5 and 6) we observe: that in *Sc. pearsonii* the nasal bones are very elongate and surpass a good deal the incisors, meanwhile in *Sc. setosus* the named bones are strikingly short, shorter than in any other *Sciuropterus*-species known to me; that the molars in *Sc. pearsonii* are very stout and represent a type quite different from the feeble and simple molars of *Sc. setosus*; that the form of the tympanic bullae is extraordinarily different in the two skulls, in one word that in the bony parts the two species present such enormous distinctions that it indeed is impossible to confound them.

I was induced to submit our typical *Sciuropterus setosus*-specimen to a closer examination as I received some weeks ago a small flying-squirrel from Deli, North East Sumatra, through the liberality of Dr. B. Hagen ¹⁾, who presented it to our Museum.

From the following it will appear that the latter is a representant of a new species quite distinct from *Sc. setosus* and which I propose to name

Sciuropterus platyurus.

It has the small size of *Sciuropterus sagitta*, *Sc. auran-tiacus* and *Sc. setosus* and is therefore at once distinguished

1) I remember that I described, in the Notes from the Leyden Museum, 1889, p. 26, under the name *Sc. hageni*, a very large new *Sciuropterus*-species, too collected by Dr. Hagen in Deli.

from *Sc. pearsonii*, *Sc. hageni* and other large *Sciuropterus*-species.

Description of the type, an adult female:

Hairs of back and upperparts of wing-membranes very short, soft; they are of a black colour and tipped with chestnut, lighter on the wing-membranes; upperparts of extremities with throughout black hairs or the black hairs have light chestnut tips or, like on the forelegs, the hairs are tipped with white. The hairs of chin, chest and underside of forelegs are pure white, those of the belly and underside of hindlegs black with white tips. The tail has uniformly colored light brown hairs.

The tail is distichous on its upper- as well as on its underside and very flat; the form of the tail is quite different from what we know of other *Sciuropteri*; it is broad in its basal half and diminishes in broadness towards its end, where it attains hardly half the dimension of the basal part. The tail of *Sciuropterus sagitta* remembers the tail of our species in a distant way.

Dimensions in millimetres:

head and body	130
tail with tuft	100
ear	13 × 8
hind foot with claws	25
length of skull	32
greatest breadth of skull	20
nasals	9
diastema	6.5
molar series (upper jaw)	6

The differences in the skull between our species and the other small *Sciuropteri* will be evident by a comparative study of the figures of their skulls on plate 7.

The incisors are light yellow colored.

Whiskers not numerous, black, less long than in other species as they measure only 37 mm. No bristles on the cheeks or on other parts of the head.

NOTE XXII.

ON A COLLECTION OF MAMMALS FROM BILLITON.

BY

Dr. F. A. JENTINK.

March 1890.

(Plate 7, figs. 11—14).

Up to this day I knew only a single Mammal, *Sciurus prevostii*, from Billiton, a small island, situated between Borneo and Banka. As the islands between Sumatra and Borneo bear a peculiar scientific interest with regard to the distribution of the animals and to the hypothesis concerning the relation in prehistorical times between these two large islands, I was in sanguine expectations in receiving a letter from Dr. A. Vorderman (Batavia), containing the kind information that he had made a journey to Billiton in June 1888 and now presented the then collected animals to our Museum. And how great was my astonishment in finding in that collection no less than 10 species of Mammals from Billiton. So that we know at present eleven well-defined species from that interesting point in the Malay Archipelago.

Two species, *Pteropus edulis* and *Sciurus prevostii*, in the collection are from Mendanao, a small island close to the west coast of Billiton.

The following 10 species are contained in Vorderman's collection from Billiton.

Tarsius spectrum Geoffroy.

An adult female and a young male (in spirits).

Notes from the Leyden Museum, Vol. XII.

This Maki is known from Java, Savoe (between Sandelwood and Timor), Sumatra, Banka, Borneo, Celebes, the Saleyer- and the Philippine Islands.

Sciuropterus vordermanni, n. sp.

This flying squirrel belongs to the small sized forms like *sagitta*, *aurantiacus*¹⁾, *setosus* and *platyurus*; it differs in the color of upperparts from *sagitta* and *aurantiacus* as it is dark colored like *setosus* and *platyurus*, but is distinguished from the two latter ones by its partially distichous tail and from all the other small sized *Sciuropteri* by its different skull, especially by the peculiar shape of the tympanic bullae.

Description of the type-specimen, an adult male (in spirits):

Hairs of back black, each hair with a terminal chestnut band; sides of parachute bordered with pure white; under surface of body and of parachute pure white, cheeks and sides of neck with a brownish orange tinge. Hairs of tail of a fine chestnut, lighter towards the base of the tail. Generally the hairs are very soft and rather long.

The tail is partially distichous, namely only its underside is distichous. All the hairs of the tail from its root to its tip are exactly of the same length.

No cheekbristles, nor bristles at the base of ears. Whiskers black.

Dimensions in millimetres:

head and body	100
tail with tuft	110
hindfoot	21
ear	12.5 × 4

1) *Sciuropterus aurantiacus* is very rare in zoological collections. It has been described in 1843 by Wagner, Schreber's Säugethiere, Suppl. Bd. III, p. 225, after a specimen in the Würzburg Museum, with the habitat Banka. I refer to Wagner's exact description. In the Leyden Museum *Sc. aurantiacus* is represented by a stuffed specimen and a skeleton, both from Banka, and presented in 1862 to our Museum by Mr. v. d. Bossche.

skull	27
nasals	7
greatest breadth	17
palate	11.5
diastema	5.5
length of upper molar series	5.5

Very characteristic in the skull is the enormous development of the tympanic bullae (plate 7, fig. 14): they are much broader and flatter than in any other species, nay than in *Sc. pearsonii* (plate 7, fig. 4).

Incisors are lighter colored than in any other species of the group.

I connect with this species the name of Dr. Vorderman, in order to show him our gratitude.

Sciurus albiceps Desmarest.

Three adult specimens, dried skins. They belong to the true *albiceps*-type. In one of the specimens the tail presents some very curious peculiarities: it is much shorter than normally and bears rings. In general the tail with its tuft measures between 460 and 530 mm., but in the specimen in consideration the tail measures only about 400 mm.; the hairs are very long, about 47 mm., those of the tip of the tail about 90 mm.; tip and base of tail deep black, all the other hairs have small orange colored tips, so that the tail seems to be alternatively ringed with broad black and narrow orange colored bands.

This species has been collected in the following localities: Siam, Malacca, Sumatra, Borneo and Java. Dr. Anderson, who united *Sciurus rubriventer* with *Sciurus bicolor* and *albiceps*, stated (Yunnan Expedition, p. 220) that this species (*Sciurus bicolor*) also was distributed over *Celebes and the adjacent smaller islands!* That *Sc. bicolor*, *rubriventer* or *albiceps* live in those *smaller islands* is quite hypothetical and not based upon a single fact nor stated by observations made by travellers or hunters: *Sciurus rubriventer*

is one of the typical Celebes-species and is unknown from other localities.

Sciurus soricinus Waterhouse.

Two adult specimens, dried skins, and one adult female in spirits.

Known from Sumatra, Banka, Borneo and Java.

Sciurus notatus Boddaert.

One adult specimen, a dried skin, belonging to the variety with red colored underside of body.

This species is a very common animal in Malacca, Java, Sumatra, Banka, Borneo, Celebes and the Saleyer Islands (cf. Notes from the Leyden Museum, 1883, p. 133, and Max Weber, Zoologische Ergebnisse, 1890, Mammalia, p. 117).

Tupaja javanica Horsfield.

One adult specimen, a dried skin.

This species has been collected in Java, Sumatra, Banka and Borneo (cf. Catalogue des Mammifères du Muséum d'Histoire naturelle des Pays-Bas, Tome XII, p. 116).

Rhinolophus trifolius Temminck.

One specimen, an adult male, in spirits.

This beautiful and very rare species has been observed in Borneo and Java.

Vesperugo vordermanni, n. sp.

One specimen, an adult female, in spirits.

Distinguished from all the other *Vesperugo*-species from the Malay-Archipelago by its *white* wing-membranes.

The ears, laid forwards, reach to the end of the nose; inner margin very convex in its lower half, then straight; tip rounded off; upper half of outer margin slightly convex, then emarginated, lower half slightly convex above, then

straight till close to the angle of the mouth, without forming a lobe. Inner margin of tragus concave, tip obtusely pointed and curved inwards, outer margin convex, at the base of the outer margin a distinct triangular lobe.

Wings from the base of the toes; tip of tail projecting; a distinct although small post-calcaneum lobe.

Wing-membranes along the side of the body hairy and colored like the back, for the rest naked; underside of interfemoral with fine hairs arising from transverse dotted lines like in *Vespertilio muricola* Hodgson.

All the hairs are of a dark brown color, lighter towards the tips. The naked wing-membranes are pure white, contrasting strongly with the dark colored body.

Inner upper incisor long, with a well-defined external cusp, outer incisor, well-developed, attains about the level of the external cusp of the inner incisor. Lower incisors trifid. Second upper premolar about two third of the height of the canine; first upper premolar very small, hardly visible without a lens, and placed inside the tooth-row, so that it is not visible from without; first lower premolar half the size of the canine, second lower premolar higher and in the same level with the most developed cusp of the first molar.

Measurements in millimetres:

head and body	50
tail	32
ear	13 × 8
tragus.	5 × 2
forearm	33
thumb with claw.	5
second finger, metacarpal	30
» » 1 st phalanx	13
third finger, metacarpal	31.5
» » 1 st phalanx	11.5
» » 2 nd »	11
» » 3 rd »	5
fourth finger, metacarpal	31

Notes from the Leyden Museum, Vol. XII.

fourth finger, 1 st phalanx	10
» » 2 nd »	8
fifth finger, metacarpal	29.5
» » 1 st phalanx	7
» » 2 nd »	5.5
tibia	13.5
calcaneum	14
foot with claws	7

Vespertilio muricola Hodgson.

Two adult females in spirits.

This species occupies a very large area of distribution, as it is to be found from Himalaya to the Malay Peninsula, and from Sumatra and Java eastward to Ternate, Celebes and Amboyna.

Emballonura semicaudata Peale.

Two adult specimens, male and female, in spirits.

This is the largest species of the genus. In Dobson's Catalogue the Polynesian subregion is given as its habitat, but in our Museum are specimens from Goram, collected by von Rosenberg in 1866, and also from Sumatra, Deli, presented to our Museum by Dr. B. Hagen in 1885, so that we state here that this species has a much larger geographical distribution (cf. Catalogue des Mammifères, 1888, Tome XII, p. 195, and Notes from the Leyden Museum, 1889, p. 30).

NOTE XXIII.

TWO NEW SPECIES OF THE LONGICORN GENUS
APHRODISIUM, THOMSON.

DESCRIBED BY

J. R. H. NEERVOORT van de POLL.

Aphrodisium planicolle v. d. Poll.

♀. Aureo-viride, nitidum, antennarum articulis basalibus quinque, parte inferiore cum pedibus subcoerulescentibus, tarsis fulvis. Caput in fronte subrugosum. Prothorax antice et postice fortiter constrictus et depressus, in disco inflatus sed sat planus haud nodosus, lateraliter fortiter spinosus; evidenter punctatus, latera versus rugosus, in medio indicatione lineae longitudinalis. Scutellum triangulare, punctis perpaucis instructum. Elytra ad apicem separatim producta; dense subtiliterque rugulosa, apicem versus obsoletius. Prosternum antice transverse plicatum; metasternum sparsim punctis piliferis instructum, lateraliter, sic ut quoque segmenta quatuor priora abdominis, pubescentia sericea obtectum; segmentum ultimum ventris glabrum, nitidum. Femora et tibiae fortiter punctata (principue femora posteriora quae fere scabrosa), nigro-pilosa. — Long. 50 mm., lat. 12 mm.

Habitat: Darjeeling.

Bright golden green above with the reflexed margin at the shoulders of the elytra bluish. Antennae with the first five joints bluish-green, clearer at the tip, the remainder dull black. Undersurface and legs more or less

bluish-green, the tibiae violaceous towards the end and the tarsi fulvous with the claw-joint infuscate at the tip.

Head slightly rugose in front, with a deep impression on each side of the interantennary ridge, rather strongly punctulate behind the upper lobes of the eyes. The scape of the antennae covered with small punctures intermixed with a few larger ones, its upper outer edge only acutely produced, not spined; the 3rd—5th joints finely punctured and clothed with a short black pile, moreover provided along the underside with a sparse fringe of soft black hairs.

Prothorax strongly constricted and depressed anteriorly and posteriorly, the median portion inflated but rather plain on the disc, without nodosities, the sides produced in a strong blunt tooth, the anterior margin but very slightly produced in the middle; distinctly punctured, near the sides, the interstices between the punctures are raised giving a rugose appearance to these parts, along the middle with faint traces of a median line.

Scutellum narrow, somewhat concave, with a few small punctures.

Elytra elongate, considerably overreaching the hinder thighs, separately pointed at the apex, entirely finely rugose (the reflexed shoulder portion excepted), the sculpture strongest on the basal fourth and becoming gradually more obsolete towards the tip; besides a somewhat more distinct humeral stria there are also traces of two costiform lines on each.

Underneath with the throat and the upper part of the prosternum transversely plicated, the metasternum sparsely covered with strigiform and piliferous punctures, the sides of the breast and of the four basal abdominal segments clothed with a fine sericeous pile, the last ventral segment glabrous and shining. Thighs and shins thickly punctured, chiefly the thighs of the hinder legs which are very coarsely punctured and somewhat scabrous; fringed with black hairs, the innerside of the anterior tibiae clothed with a thick short fulvous pile.

This species is just intermediate between *A. Cantori* Hope and *A. Hardwickianum* White. With *Cantori* it has in common the colour of the femora, but it recedes largely from that species by having a thorax without nodosities and elytra pointed at the tip. This character of the elytra places *planicolle* close to *Hardwickianum*, however, the purplish red thighs of the latter will allow to keep them separate without entering into further details.

Aphrodisium cribricolle v. d. Poll.

Nitidum, viride, interdum coeruleescens, femoribus purpureo-rubris, tarsis fulvis. Caput in fronte rugulosum. Prothorax antice in disco nonnihil nodosus, fortiter et dense punctatus, latera versus rugosus. Elytra ad apicem separatim producta, subtiliter ruguloso-punctata, obsoletius apicem versus.

Praecedenti admodum affine, sed minor, prothorace magis punctato, femoribus purpureo-rubris. Femorum colore valde appropinquat A. Hardwickiano, ab eo sculptura capitis prothoracisque discrepat. — Long. 35—45 mm., lat. 8—11 mm.

Habitat: Sikkim.

In several respects this species is nearest allied to the preceding *A. planicolle*. In as much I may judge from the five specimens I have, it is a smaller and less robust insect, the colour is not so bright, less golden and more bluish-green, the thighs are purplish-red; the head is somewhat more strongly rugose in front; the prothorax is not quite so plain on the disc and shows small nodosities in front, the punctures are much larger and more numerous and laterally the interstices between them are more strongly raised and extend over a greater part, the pointed apices and the sculpture of the elytra are almost similar.

The colour of the femora as well as the pointed tips of the elytra are placing *A. cribricolle* in immediate proximity with *A. Hardwickianum*, however in the latter species the front of the head is almost smooth and the disc of the

prothorax is glossy, sparsely punctured, the punctures being only somewhat closer together towards the sides.

A. cribricolle thus combines with some slight modifications the sculpture of *planicolle* with the coloration of *Hardwickianum*.

The male of *cribricolle* differs from the female by having much longer antennae, overreaching the tip of the elytra (whilst those of the female only reach beyond the middle of the hinder femora), longer posterior femora and five abdominal segments with large indistinct reddish patches. The latter character, however, is of no great use, as it proves to be inconstant, one of my ♂ specimens having under certain lights traces of the reddish spot on the penultimate segment only. The front part of the prosternum affords still a nice sexual character for this species as well as for all the other species of the genus I could examine; in the male sex this part is always punctured and in the female sex transversely plicated or strigose.

NOTE XXIV.

ON THE FORMA PRIODONTA OF ODONTOLABIS
LOWEI, PARRY AND THE FORMA TELEDONTA OF
ODONTOLABIS SOMMERI, PARRY.

BY

J. R. H. NEERVOORT van de POLL.

Having recently obtained a part of the Coleoptera collected by Mr. Whitehead at Mount Kina Balu (N. E. Borneo), I was greatly pleased observing a few specimens of *Odontolabis Lowei* Parry, a species which is incontestably one of the very rarest of the genus and as yet still very imperfectly known. Dr. Leuthner, although having examined almost all the more important Musea and private collections, failed to find any more specimens except the unique type, an amphiodont male specimen. The five specimens I have now before me, are all of the priodont form and differ considerably in size, four of them having a length of ± 40 mm., whilst one individual measures 57 mm. *O. Lowei* is closely allied to *O. Brookeanus* Voll. and one of its distinguishing characters, the much broader black band at the base of the elytra, proves to be inconstant, however the shape and the sculpture of the mandibles is quite different, its prosternal process less developed and the elytral rim black beneath.

Description of the forma priodonta.

Mandibles shorter than the head, opaque being entirely covered with minute granules; the sides rounded, convex and regularly narrowed towards the tip (broadly sickle-shaped and flattened in *Brookeanus*); innerside with five contiguous irregular teeth. The tubercle behind the eyes is hardly indicated in small individuals, well marked but very blunt in the larger specimen.

Notes from the Leyden Museum, Vol. XII.

Measurements.

Total length. mm.	Head. mm.	Mandibles. mm.	Prothorax. mm.	Elytra. mm.
57	12 by 18	11	10½ by 24	27 by 23
41½	9 » 12½	7	8½ » 18	21½ » 17½
39	7½ » 12	6	8 » 16½	20 » 16.

The forma teledonta of *O. Sommeri* Parry remained also unknown to Dr. Leuthner. As could be expected from analogy of the other forms, the teledont mandibles of *Sommeri* prove to be much like those of *Brookeanus*, the principal difference being the want of the large basal tooth and the presence of small granular teeth below the median fork. My two specimens are of different development and the individual with the longest mandibles is very remarkable for its having a head with a little crest, of this no parallel form of *Brookeanus* is known as yet.

Description of the forma teledonta.

Mandibles longer than the head, strongly sickle-shaped, slender and flattened, ending in a single apical spine, which is followed by a fork on the innerside (the fork of *Brookeanus* more strongly developed), along the under margin below the fork and in connection with it with from three to five irregular large granules or small teeth and a single granule on the uppersurface just at the base. Head with the anterior margin emarginate in front or slightly produced in the middle in a gently curved line, forming a little crest, and with a broad epistoma-like clypeus, broader than that of *Brookeanus*.

Measurements.

Total length. mm.	Head. mm.	Mandibles. mm.	Prothorax. mm.	Elytra. mm.
53	12 by 17	15	10 by 19	22½ by 19.
52	11 » 17	13	9 » 19	22 » 18.

NOTE XXV.

A NEW SPECIES OF THE LONGICORN GENUS
PACHYTERIA, SERV.

DESCRIBED BY

C. J. GAHAN, M. A.,

Assistant, Zoological Department, British Museum.

Pachyteria niasensis, n. sp. ♀.

Blackish blue, with the basal half of the elytra yellowish brown and the four apical joints of the antennae luteous. Prothorax with a feeble rounded tubercle on each side; pronotum opaque, very densely and coarsely punctured. Basal half of elytra coarsely and very densely punctured, apical half finely and very densely punctured and clothed with a velvety pubescence. — Length 24 mm., breadth 6 mm.

Hab. Nias Island.

The head is thickly and strongly punctured, with a smooth transverse space on the front between the most anterior part of the eyes; this space is divided in the middle by a longitudinal groove which extends upwards on to the vertex. The antennae reach to about the posterior third of the elytra; the scape is thickly and strongly punctured and impubescent; the joints from the third to the seventh are clothed with a velvety black pubescence; the four apical joints are luteous; the third joint is about equal in length to the fourth and fifth combined. The pronotum is opaque and strongly and very densely punctured excepting two transverse grooves — one at the anterior, the other at the posterior border. The posterior groove is

Notes from the Leyden Museum, Vol. XII.

limited behind by the posterior raised edge of the pronotum, and in front by a distinct transverse carina; the anterior groove is close beside, and bounded in front by, the anterior raised edge of the pronotum. The scutellum is purplish blue, punctured on each side of the basal half, and with a transverse arcuate impression near its middle. Two nearly obsolete raised longitudinal lines may be seen on the brownish basal part of each elytron; near the apex the elytra are somewhat less pubescent and have a greenish tinge; the apices are conjointly rounded. The legs are cha-lybeate blue; the femora strongly and rather thickly punctured, the posterior more thickly so. Pro- and mesosterna, and postero-lateral borders of first abdominal segment with a greyish pubescence, the rest of the underside velvety black. Fifth abdominal ventral segment rounded at the apex.

Judging from the description, this species seems to be most nearly allied to *P. parallela* Rits.

British Museum, 9 April 1890.

NOTE XXVI.

ON SOME SPECIES OF THE GENUS PACHYTERIA
FROM THE OLD COLLECTION OF THOMSON.

BY

C. RITSEMA Cz.

It will, I think, be already known to every student of exotic Coleoptera that Mr. James Thomson has parted with his beautiful collection and that it is now in the possession of Mr. René Oberthür, who in the last years increased his original collection with that of de Chaudoir, Thorey, Wehncke, van Lansberge, von Harold, de Bonvouloir, Gehin a.o. Being now about to arrange his Cerambycidae Mr. Oberthür wrote me that the species identified by me as *Pachyteria voluptuosa* Thoms. bears in Thomson's collection the name of *Pachyteria fasciata* Fabr., whilst on the other hand a specimen of the species that I believe to be the *fasciata* of Fabricius is indicated in the same collection as the type of *Pachyteria voluptuosa* Thoms. In the meantime Mr. Oberthür most obligingly communicated to me, besides some other very interesting Cerambycini, the type-specimen of Thomson's *Pachyteria voluptuosa*, as well as two specimens regarded by Thomson as belonging to *Pachyteria fasciata* Fabr. A comparison of the specimen of *Pachyteria voluptuosa* above referred to with Thomson's short description of this species on p. 568 of the »Systema Cerambycidarum» fully convinced me of the fact that I had the type-specimen before me, but at the same time I felt sure of its identity with *Pachyteria fasciata* Fabr., from which identity results that Thomson had been mistaken in

the identification of the true Fabrician species, regarding an undescribed species as such. Nevertheless I wrote to Mr. Gahan of the British Museum asking him to inform me whether *Pachyteria fasciata* Fabr. is represented in the Banksonian collection or not ¹⁾, calling moreover his attention upon the most striking distinctive characteristics between the species which I believed to be the true *fasciata* Fabr. and the one which was regarded as such by Thomson. In answer to these inquiries Mr. Gahan kindly gave me the following results of his observations on *Pachyteria fasciata* Fabr.:

»You had no doubt correctly determined this species, and it is not the one so named in Thomson's collection. I cannot affirm that the type of *P. fasciata* Fab. is in the British Museum collection, but there are two specimens bearing that name in the collection of Banks: there can be no doubt that these are correctly named, and it is not improbable that they may have served as the types. Thomson's *fasciata* is, I dare say, identical with the *Pachyteria fasciata* of Dejean's collection — a species for which I had suggested the name of *P. Dejeani*."

As *Pachyteria fasciata* Fabr. is, up to this day, only very unsatisfactorily described, whilst no description whatever is published of Thomson's and Dejean's *fasciata*, I will now proceed to describe both species, giving to the latter, which was incorrectly identified by me as *Pachyteria voluptuosa* Thoms., the name of *Pachyteria calumniata*.

Pachyteria fasciata Fabr.

Cerambyx fasciatus. Fabricius, Systema Entomologiae.
p. 168, n°. 17. (1775).

? „ *populneus* var. Schröter, Abhandlungen. I.
p. 349; tab. 3, fig. 1. (1776) ²⁾.

„ *fasciatus*. Olivier, Entomologie. IV, n°. 67;
p. 19. pl. 1, fig. 4 a, b. (1795).

1) Koenig's collection alone is quoted by Fabricius.

2) This work is still unknown to me.

Pachyteria fasciata. Castelnau, Histoire naturelle des Insectes Coléoptères. II. p. 420. (1850).

„ *voluptuosa*. Thomson, Systema Cerambycida-rum. p. 568. (1865). (according to the type-specimen).

„ *fasciata*. Ritsema, Notes from the Leyden Museum. III. p. 38. (1881); — id., l. c. X. p. 182, footnote. (1888); — id., Tijdschrift voor Entomologie. XXXII. p. xxx. (1888).

Measurements of the type-specimen of Thomson's *voluptuosa*, a female: length from the frontmargin of the interantennary ridge to the apex of the elytra 30 mm., breadth at the shoulders $9\frac{1}{2}$ mm.; measurements of a male specimen from Tranquebar in the Leyden Museum: length from the frontmargin of the interantennary ridge to the apex of the elytra $26\frac{1}{2}$ mm., breadth at the shoulders 8 mm., and those of a larger male from Bengalen in the same collection: length $29\frac{1}{2}$ mm., breadth at the shoulders $9\frac{1}{2}$ mm.

Steel blue, the elytra with violaceous tinges; the 7th and succeeding antennal joints yellow, the extreme base of the 7th and the apical half of the 11th black; the elytra provided, just before the middle, with a broad yellow transverse band, which on each elytron, has its hind margin sinuate or broadly emarginate and its frontmargin slightly oblique, so as to make the band broadest at the suture.

The head glabrous, irregularly punctured, the punctures deep; the clypeus flat, provided anteriorly with an impressed mesial longitudinal line sometimes extending to the transverse elevation which separates the clypeus from the interantennary ridge, the latter divided by a similar deeply impressed line which disappears between the upper lobes of the eyes.

The prothorax glabrous, nitid; the pronotum sparsely punctured, the punctures on the middle of the disk finer; the prosternum more or less indistinctly wrinkled, the

intercoxal part rounded, without tubercle; the intercoxal part of the mesosternum without V-shaped recess; the metasternum remotely punctured, sparsely covered with erect black hairs, and provided along the middle with an impressed line.

The scutellum triangular with acutely pointed apex, flat, glabrous and impunctate.

The elytra distinctly tapering towards the end, the apices narrowly subtruncate or faintly emarginate; pubescent and very densely and finely punctured on the blue portion, the yellow band, however, glabrous and remotely covered with large punctures.

The abdomen sparsely provided with very distinct punctures, scarcely at all pubescent. In the male the 5th segment is broadly and rather deeply emarginate, the 6th segment faintly emarginate, the hind margins of these segments fringed with black hairs; in the female the 5th segment is angularly notched in the middle.

The antennae and legs are stout, the femora strongly punctured.

Hab. Tranquebar, Himalaya, Bengalen, Cambodja, etc. Of the specimens in the British Museum Collection two are ticketed India, one China and one Ceylon. To the two specimens in Bank's Cabinet no indication of locality is attached. — In several collections.

Pachyteria calumniata, nov. spec.

Pachyteria fasciata. Dejean, in coll. (nec Fabricius).

„ *fasciata*. Thomson, in coll. (nec Fabricius).

„ *Dejeani*. Gahan, in coll. Brit. Mus.

„ *voluptuosa*. Ritsema (nec Thomson), Notes from the Leyden Museum. X. p. 182, footnote. (1888); — id., Tijdschrift voor Entomologie. XXXII. p. xxx. (1888).

Length from the frontmargin of the interantennary ridge to the apex of the elytra 24—29 mm., breadth at the shoulders 7—8½ mm.

Head, prothorax and elytra black, the latter with violaceous and bluish or greenish tints; the antennae, meso- and metasternum, legs and abdomen steely blue; the 7th and succeeding antennal joints yellow, the base of the 7th and the narrowed apical portion of the 11th black ¹⁾; the elytra provided, somewhat before the middle, with a yellow transverse band, which has nearly parallel margins; sometimes, however, the hind margin is, on each elytron, slightly oblique or even faintly emarginate.

The head is glabrous, remotely and deeply punctured, more densely so on the vertex; the clypeus hollowed, with raised margins and divided by a raised keel along the middle; the frontmargin of the clypeus minutely notched in the middle; the interantennary ridge divided by a deeply impressed line.

The pronotum glabrous, nitid, sparsely punctured, especially on the middle of the disk; the prosternum scarcely at all punctate, sericeous in the ♂, the intercoxal part rounded, without tubercle; the intercoxal part of the mesosternum without V-shaped recess; the mesosternum ²⁾ and the sides of the metasternum covered with a dense silvery grey pubescence; on the glabrous middle portion of the metasternum a longitudinal line and a few punctures are to be observed.

The scutellum very acutely triangular, flat, glabrous and provided with a few very fine punctures.

The elytra slightly tapering towards the end, the apices separately rounded and consequently somewhat dehiscent at the suture; pubescent and very finely and densely punctured allover.

The abdomen with a few scattered fine punctures, the sides covered with a silvery grey pubescence. In the male the 5th segment is broadly and deeply emarginate, the 6th

1) In the single female I have seen (from the collection of Mr. Neervoort van de Poll) only the extreme tip of the 11th joint is dark coloured.

2) In the female the middle portion of the mesosternum is glabrous.

segment very faintly emarginate, the hind margins of these segments fringed with fulvous hairs; in the female the 5th segment is truncate with broadly rounded angles and with a broad but rather faint emargination in the middle.

The antennae are more slender and more elongate than in *fasciata* Fabr., and likewise the legs are more slender, the femora less strongly punctured.

Hab. India: Tranquebar etc. About the localities of the specimens in the British Museum Collection Mr. Gahan wrote me as follows: »one is ticketed India orient. (Doubleday), one ticketed Java ¹⁾ and one, of which the locality is absolutely certain, is from the Nilghiri Hills, S. India, and was taken by Mr. Hampson.” — In several collections.

Pachyteria calumniata Rits. is a more slender species than *P. fasciata* Fabr. and it is moreover distinguished at a glance by the different conformation of the clypeus, by the fine and dense punctuation of the yellow elytral fascia, by the silvery grey pubescence of the sterna and abdomen, etc.

Pachyteria ochracea C. O. Waterh.

Of this species Mr. Oberthür sent me a female specimen (from Borneo) from Thomson's collection, which exactly corresponds to Waterhouse's description ²⁾ with the only exception that it is somewhat smaller (measuring 35 mm. from the front-margin of the interantennary ridge to the apex of the elytra), that instead of the three apical joints of the antennae the four apical ones are dusky, that the underside of the head shows a longitudinal black band along the middle of the throat ³⁾, and that the meso- and metasternum have each an ochraceous lateral spot. It is a pity that nothing is said by Mr. Waterhouse neither about the sex of his specimen nor about the shape of its

1) No doubt this indication will prove to be erroneous.

2) Ann. and Mag. of Nat. Hist. 5th ser. Vol. II (1878). p. 136.

3) Perhaps in Mr. Waterhouse's specimen the throat may be retracted into the prothorax.

apical ventral segments. In the female specimen before me the fifth ventral segment is provided with a small rounded notch in the middle of the hind margin, just as in the female of *Pachyteria Evertsi* Rits.

The examination of the above specimen has given rise to severe doubts as to the correctness of my identification of the two specimens (males) from Elopura, North Borneo, which I received two years ago from Mr. Oliver E. Janson and which I considered to belong to the above species, as they agreed perfectly well, in regard to the coloration with Waterhouse's description, showing only the two following differences: in stead of the three apical joints of the antennae the five apical ones were dusky, and the underside of the prothorax was not bluish black with a yellowish transverse stripe, but of a dark chocolate brown colour, with the exception of the contracted front portion which is black as is also the case with a curved streak across the coxae which leaves, however, the coxae free. But now I find some striking structural differences between these two sexes: in the male the labrum is larger, less convex, more closely punctured, and more deeply notched anteriorly; the antennal joints are distinctly more elongate and consequently the antennae are noticeable longer; the excavation of the head between the antennae is deeper and the top of the antennary tubers more protruding. By far more striking differences, however, exist in the shape and sculpturing of the prothorax which in the male is decidedly broader and larger than in the female: whilst in the female the prothorax is densely rugose and opaque on the disk, it is in the male but very densely punctured with glossy interstices; in the male the lateral spines are considerably more elongate, and, last not least, the underside of the prothorax, which is shining and transversely wrinkled in the female, has in the male its brown coloured portion so densely punctured that it becomes opaque and obtains a leathery appearance, and this portion is as distinctly defined as if it had been a piece let in. When the

thorax is viewed from above, this leathery portion is to be seen between the lateral spines and the frontmargin.

May these two insects possibly represent the opposite sexes of one and the same species? viz. *Pachyteria ochracea* Waterh.

The fifth ventral segment in the male is broadly and deeply emarginate, the sixth broadly and faintly so.

Pachyteria diversipes, nov. spec.

Very closely allied to *P. equestris* Newm. from Penang and Malacca, but certainly distinct. Besides several differences in coloration a valuable structural difference exists in the antennae: in the female sex of the new species they are considerably more slender than they are in the male sex of *equestris*.

As regards the coloration the head, which in *equestris* is blue with a red hinder margin, is dark reddish brown with greenish blue tinges on the cheeks, labrum and clypeus in the new species, and the thorax instead of being red, has the same colour as the head; the scutellum is entirely dark steel blue and has a black pubescence; the basal half of the elytra is of a paler reddish brown which colour rather strongly contrasts with that of the thorax; the apical half of the elytra is of a dark greenish blue; the five basal joints of the antennae, as well as the basal half of the 6th joint, are ochreous with a brownish tint on the scape and on the two following joints; the apical half of the 6th joint and the subsequent portion of the antennae black. The under surface of the body, with the exception of the head and of the prosternum in front of the anterior coxae, is rather dark steel blue; the legs are likewise steel blue with the exception, however, of the swollen portion of the anterior and intermediate femora, this portion having the dark reddish brown colour of the head and prothorax.

The punctuation of the new species agrees pretty well

with that of *equestris*; on the pronotum, however, it is somewhat stronger and denser especially towards the sides. The antennae are, as is already said, distinctly more slender and the upper surface of the scutellum is flat. The elytra have, exactly as in *equestris* Newm., *ruficollis* Waterh. (= *collaris* Harold), *javana* Bates (= *puncticollis* Rits.) and *affinis* Rits., on their apical half a sutural and a lateral impression which, like the apex, are very finely and exceedingly closely punctured and covered with a black pubescence which forms an elongate velvety patch on the inner margin of the lateral impression. The intercoxal part of the pro- and mesosternum formed as in the majority of the species (no tubercle and V-shaped recess¹⁾). The 5th ventral segment in the female (the only sex which is known to me) shaped as in the same sex of the four above quoted species, viz. an impressed angular pro-apical line preceded by an ill-defined semilunar impression whereas the apical margin is angularly notched in the middle. The apical dorsal segment is broadly triangular with narrowly rounded tip. — Length from the frontmargin of the interantennary ridge to the apex of the elytra 26 mm., breadth of the elytra at the shoulders 8 mm.

Hab. Cochin China. — A female specimen in the collection of Mr. René Oberthür, formerly belonging to that of Mr. James Thomson.

Pachyteria similis, nov. spec.

This species, though strongly resembling the preceding in coloration, belongs, according to the structural characteristics, viz. conformation of the apical segments of the abdomen etc., to the group of *P. basalis* Waterh. (= *polychroma* Harold), *rugosicollis* Rits. and *Hageni* Rits.²⁾, and

1) See in the description of *Pachyteria Borrei* Rits.: Notes Leyd. Mus. X, p. 179, line two from bottom.

2) Very probably also *P. speciosa* Pasc., a species which is unknown to me, and in the description of which nothing is said about the shape of the apical ventral segments.

among these species it is most closely allied to *basalis* Waterh. from which it may, however, (judging from the description) easily be distinguished by its darker colours and the reversed distribution of the colours on the antennae: in *basalis* the basal joints are black, the apical ones yellow, in the new species, on the contrary, the basal joints are ochreous, the apical ones black.

Length from the frontmargin of the interantennary ridge to the apex of the elytra $23\frac{1}{2}$ mm., breadth at the shoulders $7\frac{1}{3}$ mm. — The head and prothorax dark reddish brown, the cheeks and mandibles black; the two basal joints of the antennae dark reddish brown, the 3rd—7th and base of 8th joint ochreous, the subsequent portion of the antennae black. — The scutellum black, with a black velvety pubescence. — The basal half of the elytra of a paler reddish brown colour than the head and thorax, and as this colour is somewhat continued along the sutural and lateral margins, the line of demarkation between the brown basal and the dark green apical half of each elytron is strongly curved having its open side turned towards the apex. — Body underneath glossy black; legs black with the swollen portion of all the femora dark reddish brown.

The head very closely punctured, the punctures on the face finer than those on the vertex and behind the eyes; a smooth line on the vertex between the upper lobes of the eyes; the cheeks glossy, nearly impunctate; the labrum sparsely and delicately punctured. The scape of the antennae densely punctured, with a smooth, slightly raised line along the foreside.

The pronotum rugose in consequence of irregular transverse wrinkles, the intervals between the wrinkles provided with large punctures; the anterior and posterior margin strongly turned upward; the sides rounded and provided about the middle with a nipple-shaped tubercle. The scutellum regularly triangular, with slightly convex sides.

The elytra tapering towards the apex, the apex of each elytron obliquely truncate and rounded both at the sutural

and external angles; each elytron provided on the disk with two faintly raised longitudinal lines; the basal half glossy, strongly punctured, finer and much sparser, however, on the sutural streak, very fine on the shoulders, and fine and very dense at the base between the two raised lines; the apical half opaque in consequence of a fine and very dense punctuation, and densely covered with a short pubescence which is black on the green, ochreous on the reddish portion.

The under surface of the prothorax in front of the coxae minutely wrinkled, the throat glossy and impunctate; the middle portion of the metasternum glabrous and smooth, sparsely punctured behind, the sides densely covered with a short black pubescence, the hinder margin of the metasternum at the sides, the posterior coxae and a patch on the sides of the 1st—5th ventral segments covered with a dense greyish pubescence; the abdomen very sparingly provided with large and smaller punctured. The intercoxal part of the pro- and mesosternum formed as in the majority of the species (no tubercle and V-shaped recess). The 5th ventral segment broadly emarginate, the 6th very deeply emarginate, the sides of the emargination parallel; the apical dorsal segment is provided on the upper surface with a longitudinal smooth keel and angularly notched in the middle behind. The anterior femora are finely and sparsely, the intermediate and posterior femora strongly and more densely punctate.

Hab. Cochin China. — A single male specimen in the collection of Mr. René Oberthür, formerly belonging to that of Mr. James Thomson.

NOTE XXVII.

ON ZONOPTERUS FLAVITARSIS, HOPE.

BY

C. RITSEMA Cz.

After a careful examination of not less than 14 representatives of the genus *Zonopterus* to which Hope's description of *flavitarsis*¹⁾ is applicable, I hesitate to decide whether this is a very variable species as regards the form of certain parts of the body, or that there are several species so closely allied to one another that, without extensive series, it will prove to be impossible to define the specific characteristics in a manner sufficient enough to allow future identification from the descriptions only.

Of the 14 specimens now before me 9 are males, 5 females, and, without exception, the former have the abdomen red, the latter blue. I therefore believe the difference in colour of the abdomen to be of sexual value²⁾.

The parts of the body in which I observe differences in shape (the sculpture, on the contrary, appears to be very constant) are: the interantennary ridge, the antennae, the prothorax, the scutellum and the intercoxal parts of the pro- and mesosternum, and in the male moreover the 5th and 6th ventral segments.

As to the coloration the antennae have constantly the 4 basal joints and the base of the 5th black (the tip of the 4th, sometimes also that of the 3rd, marked on the outside with a luteous spot), but the shape of the two luteous elytral bands is very variable.

The 9 male specimens vary in length from 21,5—33 mm., the 5 female specimens from 31—35 mm.

1) Trans. Linn. Soc. London. XIX (1843). p. 111; pl. 10, fig. 7.

2) This, most probably, will likewise prove to be the case with *Zonopterus consanguineus* Rits. (Notes Leyd. Mus. 1889. p. 10) of which I have seen four females with a blue and one male with a red abdomen.

NOTE XXVIII.

SUPPLEMENTARY LIST OF THE DESCRIBED SPECIES
OF THE LONGICORN GENERA ZONOPTERUS,
PACHYTERIA AND APHRODISIUM.

BY

C. RITSEMA Cz

Since the publication of my List of the described species of *Zonopterus*, *Pachyteria* and *Aphrodisium* ¹⁾, the following new species of these genera have been published, whereas moreover a species, years ago described in the genus *Callichroma*, must be referred to the genus *Aphrodisium*. Finally, a note on *Zonopterus flavitarsis* Hope (vide ante p. 174) and supplementary descriptions of *Pachyteria fasciata* Fabr. (vide ante p. 164) and of *Pachyteria ochracea* Waterh. (vide ante p. 168) have appeared.

Zonopterus

Hope. Trans. Linn. Soc. London. XIX. 1843, p. 110.

magnificus H. W. Bates. Proc. Zool. Soc. Borneo.
London. 1889. p. 391.

Pachyteria

Serville. Ann. Soc. Ent. France. 1833. p. 553.

vandepolli Rits. Notes Leyd. Mus. 1889. p. Malacca.
49; pl. 10, fig. 2.

apicalis v. d. Poll. Notes Leyd. Mus. 1889. Borneo.
p. 219; pl. 10, fig. 1.

niasensis Gahan. Notes Leyd. Mus. 1890. Nias.
p. 161.

1) Tijdschrift voor Entomologie. Vol. XXXII (1888), p. xxix.

calumniata Rits. 1) Notes Leyd. Mus. 1890. India or.
p. 166.

diversipes Rits. l. c. p. 170.

Cochin China.

similis Rits. l. c. p. 171.

» »

Aphrodisium

Thomson. Syst. Ceramb. 1866. p. 173.

semiignitum Chevrl. Revue Zoolog. 1841. Manilla.
p. 227 (*Callichroma*).

planicolle v. d. Poll. Notes Leyd. Mus. 1890. Darjeeling.
p. 155.

cribricolle v. d. Poll. l. c. p. 157.

Sikkim.

In consequence of these additions the genus *Zonopterus* now contains 5 species, the genus *Pachyteria* 32 species, and the genus *Aphrodisium* 9 species.

1) This is the *Pachyteria voluptuosa* Thoms. of my List, but the true *voluptuosa* Thoms. = *fasciata* Fabr. (vide ante p. 163).

NOTE XXIX.

NOTICE SUR LA TYANA SUPERBA, MOORE.

(Proc. Zool. Soc. of London. 1867. p. 668; pl. 33, f. 15).

PAR

P. C. T. SNELLEN.

Monsieur Ritsema, ayant reçu de Mr. A. L. van Hasselt, Résident à Padang Sidempoean (Sumatra occid.), pour le Musée de Leide, un exemplaire très-frais et assez bien conservé de cette belle espèce, qui mérite bien son nom, me permit à ma demande de l'examiner afin de bien déterminer sa position systématique, ce qui ne me paraissait pas superflu parce que le genre *Tyana* Walker n'a été décrit par ce compilateur que d'une manière tout-à-fait vague et insignifiante dans le Catalogue du Musée Britannique, Vol. 35, p. 1776. Monsieur Moore, en décrivant son espèce, a cru sans doute pouvoir renvoyer à Walker pour les caractères génériques, ce qui est d'autant plus regrettable, parce que Walker décrit les deux espèces de son genre *Tyana* comme ayant les ailes antérieures vertes, tandis qu'elles sont d'un jaune clair avec de grands espaces d'un blanc brillant et quelque peu nacré. En effet, à la première vue on croit avoir affaire à une espèce de Tortricide, venant auprès de *Conchylis* Led. (*Cochylis* Treits.) et s'alliant aux *Conch. lathoniana* et *margaritana*. Cependant, les ailes postérieures n'ont que deux nervures internes, 1^a assez courte, 1^b aboutissant au bord postérieur, près de l'angle anal, ce qui éloigne la *superba* des Tortricines. Les ailes antérieures ont une nervure interne,

Notes from the Leyden Museum, Vol. XII.

la nervure 5^e prend son origine à l'angle interne de la cellule discoïdale, la nervure 8^e (sous-costale) des ailes postérieures s'éloigne de la cellule dès son origine et le frein est bien distinct, long et mince. Il ne reste donc que les Liparidina, les Lithosina et les Noctuina auxquelles la *superba* pourrait appartenir. La première famille est mise hors de cause par la présence des stemmates chez la *superba*, ensuite par le corps très-lisse et le fait que la nervure sous-costale des ailes postérieures ne forme qu'une cellule accessoire insignifiante à sa base avec la sous-médiane ou le bord antérieur de la cellule discoïdale.

On pourrait donc considérer la *superba* comme une Noctuélite, n'étant l'absence de la cellule accessoire des ailes antérieures et la distance considérable où la cellule discoïdale de ces mêmes ailes se trouve du bord costal. En effet, quoique la cellule accessoire fasse aussi défaut chez les genres *Xanthodes*, *Thalpocharis* et chez quelques autres à palpes très-développés alliés à *Zanclognatha*, chez tous ces genres de Noctuélites la cellule discoïdale est située bien plus près du bord costal. Mais l'éloignement susdit se retrouve aussi chez le genre *Earias* et, quoique chez les espèces de la faune palaearctique et les exotiques que je connais, la sous-costale des ailes postérieures soit parfaitement soudée à la médiane sur le premier tiers de son parcours, sans former une petite cellule accessoire à sa base comme chez les Noctuélites typiques et la *superba*, je crois que la vraie place de cette espèce est bien près d'*Earias* comme l'indique d'ailleurs Mr. Moore. Le genre *Earias*, comme *Chloëphora* et *Halias*, est un peu ambigu et paraît se tenir sur les limites assez incertaines des Lithosina et des Noctuina.

Je ne possède ni la *Tyana chloroleuca* ni *callichlora* Walker et, comme je le remarque plus haut, la description de leurs caractères génériques n'a aucune valeur, mais en comparant mes *Earias* (auxquelles ces espèces de Walker sont peut-être alliées) à la *superba*, je trouve la différence capitale que celle-ci n'a que 10 nervures aux ailes antérieures,

toutes naissantes de la cellule discoïdale. On peut considérer 8 et 9 comme faisant défaut, leur place ordinaire étant vide. Le genre *Earias* a 12 nervures. Aux ailes postérieures la nervure 5^e est très-faible, 3 et 4 sont pétiolées, 6 et 7 viennent d'un point comme 4—5 et 6—7 des ailes antérieures. Le thorax et l'abdomen sont revêtus d'écailles très-lisses, le dernier a une seule crête sur le premier anneau. Les palpes manquent et des antennes il ne reste qu'une petite portion qui est filiforme et glabre. La trompe est roulée, les yeux sont nus, le front plat.

Quant aux caractères spécifiques, je dois noter que l'individu du Musée de Leide diffère de la figure que donne Mr. Moore en ce que la portion apicale des ailes antérieures n'a qu'une tache médiocre argentée presque carrée, au lieu d'une très-grande tache bilobée, accompagnée de deux points plus petits, et que la première bande jaune est bien plus élargie vers le bord costal. L'abdomen est aussi plus mince sur la figure de Moore, mais ceci ne me semble pas d'une grande importance, étant peut-être causé par un fort aplatissement latéral, résultant d'une compression excessive dans la papillote.

La seconde espèce de *Tyana* que Mr. Moore mentionne dans l'opuscule susdit (la *callichlora* Walker, Catalog. 35, p. 1776) et dont il donne une figure, est assez analogue à la *clorana* L. et la *limbana* Snellen. Peut-être elle est, comme *chloroleuca* Walker, une *Earias* pure, et le nom générique *Tyana* (avec Moore comme auteur) pourrait rester à la *superba*.

NOTE XXX.

ON CYRIOCRATES ZONATOR, THOMS.

BY

C. RITSEMA Cz.

The above species, of which Mr. René Oberthür kindly sent me the type-specimen (a ♂ from Siam) for examination, undoubtedly belongs to the genus *Melanauster*, and is very closely allied to *Melanauster Medenbachii* Rits. which latter, according to a male specimen in the Leyden Museum, inhabits the Island of Java. Thomson's species, however, has the 3rd and 4th joints of the antennae distinctly less (almost imperceptibly) swollen at the tip, so as to make these joints more regularly cylindrical, the scutellum is shorter, and broader at the base, the shoulders are more broadly rounded, and the front-tibiae are more slender. It has moreover a glabrous band along the middle of the pronotum, the glabrous transverse bands of the elytra are as broad as those formed by the small golden green scales (in *Medenbachii* they are distinctly narrower), and, last not least, the erect black stiff hairs on the elytra are decidedly longer in *zonator* than in *Medenbachii*.

The grey colour of the scaly pubescence in my specimens of *Medenbachii*, most probably will prove to be due to their having been preserved for some time in spirits.

NOTE XXXI.

DESCRIPTIONS DE COLÉOPTÈRES NOUVEAUX DE LA
FAMILLE DES EUMOLPIDES

PAR

M. Ed. LEFÈVRE,

Ancien Président de la Société Entomologique de France.

Pagria aeneicollis, spec. nov.

Breviter ovata, convexa, subtus brunneo-picea, capite prothoraceque nigris, viridi-reflexo-aescentibus, nitidis, labro, palpis, antennis pedibusque fulvis, elytris fulvis (sutura tota lata nigro-picea, vage reflexo-aenea), singulo maculis duabus (altera intra impressionem basalem, postice magis minusve extensa, altera lata juxta marginem lateralem posita) nigro-piceis.

Long. $1\frac{1}{2}$ mill.; lat. 1 mill.

Var. β . *Elytrorum maculis omnino deletis.*

Java: Batavia (de Gavere et A. L. v. Hasselt); Sumatra: Lahat (Giesbers), Fort de Kock (v. Riemsdijk).

Caput inter oculos vage transversim impressum, remote undique leviter punctatum, post oculos late et profunde canaliculatum. Prothorax in medio disci remote et leviter, ad latera autem grosse et subconfluentes, punctatus, juxta basin spatio lato laevi instructus, margine laterali utrinque medio subacute angulatus. Scutellum parvum, piceum, laeve, apice rotundatum. Elytra infra basin breviter transversim utrinque impressa (spatio inter callum humeralem et scutellum subcalloso, laevi), lineatim regulariter punc-

tata, punctis grossis, nigris, intra impressionem basalem profundioribus. Pedes breves, femoribus subtus dente minutissimo armatis.

Voisin du *P. sumatrensis* Ed. Lef. En diffère surtout par la taille plus petite et la couleur noir-bronzé de la tête et du prothorax.

Heteraspis igneipennis, spec. nov.

Breviter oblonga, convexa, undique pilis albidis suberectis modice oblecta, corpore subtus, capite prothorace, scutello pedibusque metallico-viridibus, magis minusve cyaneo-tinctis, elytris cupreo-igneis, fulgidis, sutura sicut et margine laterali utrinque concinne viridi-metallicis vel cyaneis.

Long. 6—6½ mill.; lat. 3½—3¾ mill.

Timor (Wienecke).

Caput sat dense punctatum, epistomate antice angulatum parum profunde emarginato, labro fusco, viridi-æneo-tincto, palpis antennarumque articulis 2—5 saturate fulvis, harum articulo 1º. viridi-metallico, quinque ultimis nigris, modice ampliatis. Prothorax crebre et grosse punctatus, angulo anteriori spatio calloso utrinque notato. Elytra basi thorace latiora, leviter inordinatim punctata, punctis versus apicem minoribus, fere deletis.

Pseudocolaspis insignis, spec. nov.

Late ovata, convexa, viridi-aurata vel fusco-ænea, subcupreo-reflexo-tincta, nitida, undique pilis longis argenteo-sericeis (appressis et rectis intermixtis) sat dense oblecta, labro sicut et palpis nigro-piceis, antennis, tibiis tarsisque brunneo-testaceis, femoribus crebre fortiter punctatis, subtus dente brevi armatis.

Long. 5½—7 mill.; lat. hum. 3½—4 mill.

Somalis. (Présenté par M. van Lansberge).

Caput creberrime confluentem rugose punctatum, epistomate antice arcuatim emarginato. Prothorax convexus, plus

duplo latior quam longior, crebre sed parum profunde substrigatim punctatus, infra marginem anticum transversim evidenter impressus, margine laterali utrinque antice deleto. Scutellum latum, pentagonum, punctatum. Elytra basi thorace latiora, infra basin leviter subarcuatim impressa, spatio inter callum humeralem et scutellum subtumido, dense minute punctata, interstitiis basi et intra impressionem basalem leviter substrigatis, callo humerali ipso elevato, lævi, tumido.

Pseudocolaspis Lansbergi, spec. nov.

Ovata, postice attenuata, convexa, metallico-ænea, subcupreo-tincta, nitidissima, undique pilis squamæformibus appressis (corpore subtus albidis, supra autem aureis) dense oblecta, labro æneo-cupreo, fulgido, palpis sicut et antennis nigro-cyaneis, harum articulis 5 ultimis dilutioribus, minus nitidis, pedibus gracilibus, æneo-cupreis, femoribus tibiisque elongatis, illis crebre fortiter punctatis, subtus dente longo et acuto armatis.

Long. $3\frac{1}{2}$ —4 mill.; lat. hum. $2\frac{1}{3}$ — $2\frac{1}{2}$ mill.

Somalis. (Présenté par M. van Lansberge).

Caput subcrebre punctatum, in media fronte spatio lævi longitudinaliter instructum, epistomate antice arcuatim emarginato. Prothorax convexus, vix duplo latior quam longior, crebre undique punctatus, margine laterali utrinque antice deleto. Scutellum latum, subpentagonum, punctatum. Elytra basi thorace latiora, postice attenuata, infra basin subarcuatim sat fortiter impressa, spatio inter callum humeralem et scutellum subtumido, dense minute punctata, punctis intra impressionem basalem paulo majoribus, callo humerali ipso tumido, punctulato, lucido.

Abirus globicollis, spec. nov.

Breviter oblongus, subcylindricus, subtus viridi-æneus et pilis albidis modice oblectus, supra viridi-auratus, subcupreo-

aneo-micans, nitidus, labro sicut et palpis piceis, antennis dimidio corpore vix longioribus, articulo 1^o. metallico-viridi, 2—6 brunneo-testaceis, quinque ultimis saturate cyaneis, fortiter ampliatis, pedibus saturate cyaneis, vage viridi-tinctis.

Long. 9 mill.; lat. $4\frac{1}{2}$ mill.

Insula Banka (Vosmaer).

Caput pilis albidis appressis, certo situ tantum conspicuis, minutissime instructum, vertice lato, subremote irregulariter punctato, medio longitudinaliter obsolete sulcato, ad latera substrigoso. Prothorax valde convexus, subglobosus, crebre undique aciculatim punctatus. Elytra juxta suturam lineatim sat regulariter punctatis, interstitiis planis, versus apicem subelevatis, disco exteriori transversim elevato-strigata.

Phytorus assimilis, spec. nov.

Oblongo-subelongatus, convexus, subtus nigro-piceus, supra fusco-aeneus, subcupreo-viridi-tinctus, nitidus, labro, palpis antennisque fulvo-testaceis, pedibus piceo-brunneis.

Long. $6-6\frac{1}{2}$ mill.; lat. $3\frac{1}{2}-3\frac{3}{4}$ mill.

Borneo (Schwaner et Müller).

Caput inter oculos profunde transversim impressum, vertice subcrebre punctulato, margine antico bilobato et sulco brevi longitudinaliter instructo, epistomate remote punctulato, antice subrecte truncato. Prothorax sat dense leviter punctatus, punctis juxta marginem lateralem utrinque fere deletis. Scutellum laeve. Elytra regulariter lineatim striata, striis vix perspicue punctulatis, interstitiis laevibus, magis minusve convexis. Femora intermedia sicut et postica mutica, antica subtus denticulo minutissimo armata.

Cette espèce est voisine du *P. fervidus* Ed. Lef. Elle en diffère par la taille plus forte, la forme générale plus allongée et parallèle, par les intervalles des stries des élytres plus ou moins convexes.

Phytorus pallidus, spec. nov.

Breviter suboblongo-ovatus, modice convexus, omnino late flavus, nitidus, oculis sicut et mandibulis nigris.

Long. $4\frac{1}{2}$ mill.; lat. $2\frac{1}{4}$ mill.

Borneo: Pleyhari (Semmeling).

Caput et prothorax læves, illud inter oculos transversim sulcatum. Elytra regulariter sat profunde punctato-striata, punctis minutissimis, interstitiis convexiusculis. Femora antica sicut et postica subtus dente parvo acuto armata.

Stethotes fulvilabris, spec. nov.

Ovata, convexa, postice attenuata, subtus nigra, supra nigro-cyanea, nitida, labro, palpis antennisque fulvo-testaceis, harum articulis quinque ultimis paululum infuscatis.

Long. $3\frac{1}{2}$ mill.; lat. 2 mill.

Nouvelle Guinée: Andai (v. Rosenberg).

Caput utrinque post oculum late sed parum profunde excavatum, vertice subtumido, strigose punctato, media fronte profunde fossulata. Prothorax subconicus, dorso subtiliter, ad latera fortius, subremote punctatus. Elytra basi thorace multo latiora, postice attenuata, regulariter lineatim punctata, punctis infra humeros et ad latera majoribus. Pedes cyaneo-nigri, femoribus subtus dente longo et acuto armatis.

Stethotes longimana, spec. nov.

Ovata, convexa, postice attenuata, subtus rufo-brunnea, viridi-æneo-tincta, supra nigra, vage viridi-cyaneo-tincta, nitida, antennarum articulis quatuor primis rufo-fulvis, reliquis piceis, pedibus anticis valde elongatis, rufo-brunneis, cyaneo-reflexo-tinctis.

Long. 5 mill.; lat. 3 mill.

Waigeo (Bernstein).

Caput utrinque post oculum late et profunde excavatum,

vertice valde tumido, fortiter substrigose punctato, antice bilobato, epistomate lævi. Prothorax subconicus, subtiliter remote punctulatus. Elytra basi thorace multo latiora, postice attenuata, regulariter lineatim punctata, punctis infra humeros et ad latera majoribus, callo humerali ipso tumido, lævi. Femora subtus dente valido acuto armata.

Rhembastus flavidus, spec. nov.

Suboblongo-ovatus, modice convexus, læte flavus, nitidus, capite rufescente, antennarum articulis quinque ultimis fuscis.

Long. $3-3\frac{1}{3}$ mill.; lat. $1\frac{3}{4}-2$ mill.

Afrique tropicale occidentale: Humpata (v. d. Kellen).

Caput sat dense undique punctatus, in media fronte obsolete impressus. Prothorax transversus, lateribus leviter rotundatus, parum dense subaciculatim punctatus, utrinque juxta marginem lateralem spatio lævi instructus. Scutellum lævissimum. Elytra regulariter lineatim punctulatis, punctis versus apicem minoribus. Femora subtus vix perspicue denticulata.

Cleorina fulvipes, spec. nov.

Ovata, convexa, subtus niger, pectore æneo-tincto, supra viridi-ænea, nitida, labro, palpis, antennis pedibusque fulvis.

Long. 3 mill.; lat. 2 mill.

Celebes: Gorontalo (v. Rosenberg).

Caput remote punctatum, epistomate antice sat fortiter angulatim emarginato. Prothorax dorso subremote, ad latera crebrius et subconfluent, grosse punctatus, lateribus subarcuatus, juxta marginem anticum spatio lævi et sulco profundo transversim instructus. Elytra infra humeros late subarcuatim impressa, spatio inter callum humeralem et scutellum tumido, regulariter substriato-punctata, punctis ad latera et intra impressionem basalem majoribus, callo humerali ipso valde tumido, lævi.

Corynodes Schwaneri, spec. nov.

Brevis, ovatus, valde convexus, subtus cyaneus, subviolaceo-reflexo-tinctus, supra metallico-viridis, aurato-reflexo-micans, nitidus, epistomate fronte separato, antennarum clava quinque articulata, prothorace grosse subremote punctato, elytris fortiter et regulariter lineatim punctatis, pedibus cyaneis, tarsis viridi-æneis, unguiculis appendiculatis.

Long. 7—8 mill.; lat. 4—4½ mill.

♂ *Femoribus intermediis subtus dente subacuto armatis; tibiis ejusdem paris extus paulo ante medium sinuatis, dein usque ad apicem ampliatis.*

♀ *Pedibus intermediis simplicibus.*

Borneo (Schwaner).

Caput inter oculos profunde transversim impressum, vertice tumido, fortiter subremote punctato, sulco longitudinali subtiliter instructo, frontis margine antico trilobato, lobis lateralibus obtusis, lobo intermedio subtriangulari, leviter producto, sulcis orbitalibus latis, profundis, lævibus; epistomate subtilissime alutaceo, punctulato, antice subrecte truncato; labro piceo; mandibulis nigris; palpis basi fulvis, apice piceis. Antennæ satis elongatæ, articulo 1^o. inflato, metallico-viridi, articulis 2—6 æneis, quinque ultimis modice dilatatis compressisque, nigro-cyaneis. Prothorax non semel latior quam longior, convexus, lateraliter valde deflexus, antice post oculos utrinque sinuatus, lateralibus modice rotundatis, a basi ad apicem convergentibus, dorso grosse subremote punctatus, interstitiis præsertim ad latera (oculo armato) minutissime punctulatis. Elytra brevia, valde convexa, ultra medium subito deflexa, infra humeros late transversim impressa, fortiter et regulariter lineatim punctata, punctis intra impressionem basalem majoribus, interspatiis alternis subelevatis, lævibus, ad latera et versus apicem costulatis. Pedes robusti, breves, femoribus fortiter punctatis, tibiis carinatis, subtus profunde canaliculatis, apice summo pilis fulvis instructis.

Colaspoides venusta, spec. nov.

Suboblongo-ovata, convexa, viridi-metallica, aurato-micans, nitida, labro, palpis antennisque fulvis, hic apice piceo-infuscatis, femoribus viridi-metallicis, anticis subtus medio angulatis, intermediis muticis; posticis subtus dente valido et acuto armatis, tibiis tarsisque brunneo-testaceis.

Long. 7—8 mill.; lat. $3\frac{1}{2}$ —4 mill.

Var. β . *Capite inter oculos, prothorace antice elytrisque omnino violaceo-roseis, fulgidis.*

Sumatra: Solok (Expéd. Scient. Néerl.); la variété de Serdang (Hagen).

Caput vix perspicue valde remote punctulatum, inter oculos vage impressum. Prothorax transversus, lævis, punctis nonnullis hic illic irregulariter digestis instructus. Scutellum lævissimum. Elytra infra humeros obsolete transversim impressa, subgeminatim punctata, punctis ad latera et intra impressionem basalem majoribus, interstitiis versus apicem subelevato-costulatis.

Colaspoides ciliatipes, spec. nov.

Oblonga, modice convexa, subtus cum pedibus brunneo-testacea, pectore aeneo-tincto, supra subbrunneo-aenescens, nitida, labro brunneo-testaceo, palpis antennisque pallide fulvis, harum articulis duabus ultimis fuscis, femoribus anticis subtus medio minutissime denticulatis, intermediis muticis, duobus posticis elongatis, fuciformibus, ultra medium ampliatis ibique dente valido acuto armatis, margine ipso pilis fulvis dense et longe ciliato.

Long. 6 mill.; lat. $3\frac{1}{4}$ mill.

Insula Engano prope Sumatra (Wienecke).

Caput inter oculos transversim impressum, juxta antennarum insertionem spatium lævi tumido oblique instructum, remote subtiliter punctatum. Prothorax remote subtiliter aciculatim punctatum. Elytra seriatim subgeminato-punctata, interstitiis ad latera et versus apicem subcostata.

NOTE XXXII.

ON A LARGE SPECIMEN OF ORTHRAGORISCUS
ON THE DUTCH COAST.

BY

Dr. Th. W. van LIDTH de JEUDE.

(Plate 8).

On the 13th of Dec. 1889 a great Sun-fish was washed ashore at Ameland. Through kind intervention of the mayor of the island, D. W. J. baron van Heeckeren, the gigantic fish was sent up to the Leyden Museum, where it arrived a few days afterwards in a satisfactory state. As far as I know of, it is one of the largest specimens of *Orthragoriscus*. The dimensions are as follows:

Distance from the tip of the mouth to the extremity of the tail.	M. 2.23
Distance from the root of the dorsal fin to the root of the anal fin, measured at the anterior part of the fins.	M. 1.40
Distance from the root of the dorsal fin to the root of the anal fin, measured at the posterior part of the fins.	M. 1.12
Distance from the top of the dorsal fin to the top of the anal fin	M. 2.80
Distance from the tip of the mouth to the anterior part of the root of the dorsal fin . . .	M. 1.45
Distance from the tip of the mouth to the anterior part of the root of the anal fin. . . .	M. 1.53
Breadth of the dorsal fin measured at the root.	M. 0.42

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Breadth of the anal fin measured at the root. .	M. 0.35
Distance between the tip of the upper jaw and the anterior part of the root of the pectoral fin.	M. 0.67
Distance between the tip of the upper jaw and the centre of the eye.	M. 0.30
Horizontal diameter of the eye	M. 0.08 ^s
Vertical diameter of the eye	M. 0.07
Greatest thickness measured between the pectoral fins.	M. 0.45
Thickness measured just behind the pectoral fins.	M. 0.42
Breadth of the pectoral fin measured at its root.	M. 0.21

The weight of the liver amounted to 68 kilograms, whilst the ovarium (our specimen is a female) weighed 4.5 kilograms. The diameter of the best developed eggs varied between 0.42 m.m. and 0.45 m.m.

There was hardly any trace of asymmetry, as found by Prof. Harting with *Orthratoriscus ozodura* ¹⁾.

On trying to determine the species into which this Sun-fish has to be classed, we meet with great difficulties; for whilst ichthyologists as Günther and Day class all specimens of *Orthratoriscus* into 2 or 3 species, viz. *O. mola*, *O. lanceolatus* and *O. truncatus*, the first of which only is said to be found on our coast, Ranzani divided them into 6 genera and 15 species. This is to be accounted for that Ranzani made his classification ²⁾ after an examination of stuffed specimens, or of the description of those stuffed specimens, which examination he carried on in no critical manner, as is now generally acknowledged, even by Italian ichthyologists.

It must be owned that descriptions or drawings made from live or fresh specimens are, comparatively speaking, rare. Among these are to be mentioned: A. J. Retzius'

1) P. Harting, Notices zoologiques, anatomiques et histologiques sur l'*Orthratoriscus ozodura*. Utrecht, 1865.

2) Ranzani, Nov. Comm. Ac. Sc. Inst. Bonon. III, 1839, p. 80.

description and figure of *Tetrodon mola* ¹⁾, the drawing given by Schlegel of a specimen captured in Japan ²⁾, the treatise of Jan Plancus ³⁾, Yarrel's drawing ⁴⁾, Harting's minute description and accurate drawing of *Orthratoriscus ozodura* mentioned before, Steenstrup and Lütken's detailed description of *Mola nasus* ⁵⁾, and Day's figure ⁶⁾. However I can hardly believe that these 7 specimens of *Orthratoriscus* belong to one species.

First and foremost I wish to call attention to the presence or the absence of the folded band between the body and the caudal fin. Such a folded band is distinctly visible in the drawings, mentioned of Retzius, Schlegel, Plancus and Yarrel, not however in those of Harting and Day, whilst Harting expressly states the absolute absence of such a band in the specimen described by him. Steenstrup and Lütken, too, in the description of *Mola nasus*, state that dorsal and anal fin are distinctly separated from the body by a deep fold of the skin, whereas the thick caudal fin runs on unbroken with the body ⁷⁾.

Retzius mentions, that, on being dried, the folds in the band (Rynkbandet) disappear altogether, and so it is not impossible, that this band was overlooked, when stuffed specimens were examined and described. Still its presence may even in a dried state be very distinctly noted. Whereas namely, owing to dermal ossifications, the skin of whole the body as well as that of the caudal fin is covered all over with small prickles of various size, these prickles are not found on the folded band, except on the ridges of that band. In a dried state that folded band is clearly distinct from the rest of the skin, and appears as a smooth

1) Retzius, Vet. Ac. Nya Handl. VI, 1785, p. 115, tab. 4.

2) Fauna Japonica, Poissons, tab. CXXVII.

3) Jan Plancus, Comm. Inst. Bonon. III, p. 331, tab. 8.

4) Yarrel, British Fishes, 3rd edition, p. 432.

5) Steenstrup and Lütken, Overs. Dansk. Vid. Selsk. Forh. 1863, p. 36.

6) F. Day, The Fishes of Great Britain and Ireland, vol. II, pl. CXLVIII.

7) l c. p. 37: „tykke Halefinne, der gik i Eet med Kroppen.”

band, occasionally interrupted by narrow stripes of inequalities.

Of the four specimens, to be found under the name of *Orthragoriscus mola* in the Leyden Museum, up to the 13th of Dec. 1889, two specimens present no traces of a dermal fold; the former of these, long about M. 1.10, was captured on the Dutch coast, the latter, long about M. 0.90, off Leghorn. Our third specimen is from Japan, long about M. 0.90, and presents, like the picture in the Fauna Japonica, a distinct band between the body and the caudal fin. The fourth specimen, long about M. 0.65 from the Cape of good Hope, is in a very bad state of preservation; the upper part of the body shows no traces of the folded band, whereas the lower part would seem to show them, but in my opinion these are no remains of the folded band, as the epidermis, owing probably to maceration, has disappeared, in consequence of which a smooth surface has been produced.

Hence, there are specimens of *Orthragoriscus* with which the caudal fin is separated from the body by a folded band, and others showing no such folded band. An examination of the different specimens proves at once that this cannot possibly be the result of age. Retzius' specimen with folded band measured 1 foot, 11 inches, our specimen from Japan M. 0.90, whilst Plancus' specimen weighed 400 g . Nor can sex produce this difference, seeing that Harting's specimen lacking the folded band was a female, and that the *Orthragoriscus* treated of in this note is also a female, provided with such a folded band.

In the second place I wish to call attention to the hump above the mouth, which, according to Günther's Catalogue¹), develops with age, and is topped by an osseous tubercle, which in very young specimens is a spine. On comparing different descriptions and figures with each other, we find that, as to the absence or presence of this

1) A. Günther, Catalogue of the fishes in the British Museum, vol. VIII. p. 317.

hump, there also obtains a great difference among different individuals.

Harting, in his description of *Orthrageriscus ozodura*, speaking of the hump and the osseous tubercle says: »Ce disque osseux donne au museau de l'animal une certaine ressemblance avec celui de quelques mammifères fouisseurs à nez prominent et tronqué" ¹⁾.

Steenstrup and Lütken also mention a conic snout or proboscis with their specimen of *Orthrageriscus* without folded band ²⁾.

Also Houttuyn's engraving ³⁾ and Yarrel's figure, mentioned above, show a snout protruding above the mouth. On comparing Schlegel's drawing in the *Fauna Japonica* or Retzius' figure we find not the slightest trace of a snout or proboscis, on the contrary the line from the mouth to the beginning of the caudal fin runs on in a convex curve over the eye.

Moreover Harting mentions »une crête verticale qui s'élève lelong du dos et atteint 4 centimètres de hauteur. Postérieurement elle se confond avec la nageoire dorsale."

Our specimen from Ameland shows no traces of such a crest, nor do I find mention made of it in other descriptions; on the other hand I find them with two of the specimens in our Museum mentioned before, viz. with the specimen from the Dutch coast, and with that caught off Leghorn. Moreover these two present the osseous tubercle above the mouth. Our specimen from Japan shows no sign either of the crest on the back, or of an osseous tubercle above the mouth.

As regards the splitting up of the jaws, I do not believe this to be a reliable feature for specific distinction, as specimens of different size display different stages of development.

1) Harting l. c. p. 6.

2) Steenstrup and Lütken, l. c.: »at Hovedet sprang frem foran og over den lille Mund i Form af en but kegledannet Snude eller Tryne."

3) Houttuyn, *Natuurlijke Historie*. Dl. I, p. 494, Tafel LXVIII, fig. 7.

A very young specimen (about 4 c.m.), which Prof. A. A. W. Hubrecht kindly lent me for comparison from the Utrecht Museum, presents two clearly separated teeth in the upper as well as in the lower jaw.

On the other hand as regards the proportion between length and height, as well as the place of insertion of the dorsal and anal fin, I believe these to be reliable specific characteristics with fishes of nearly the same size. For this purpose however it is necessary that the measurements should be very carefully taken from the fresh fish, in as much as these dimensions undergo considerable change after stuffing.

I quite agree with Prof. Harting, that the only way to solve this difficult question is to have good figures made in fresh state of all specimens captured, and to publish these drawings with a minute description.

That is why I have had a drawing made of our Ameland specimen, immediately after its arrival. This drawing, made under my direction by Mr. R. Raar at $\frac{1}{20}$ of the natural size, renders the outward form and the proportions of the animal most correctly, and is added to this note in an engraving.

On examining this engraving we immediately notice a particularity of the folded band, which as far as I know, has never been noticed before. This band, broad 11 c.m. in the middle of the upper part of the body, and 10 c.m. in the middle of the lower part, parts off backward, exactly opposite the mouth in the middle of its whole length. The side-branch thus produced, runs on to the extremity of the caudal fin, which it divides into an upper and a lower part. There is a total absence of dermal ossifications on this folded band, as well as on its side-branch, except on the prominent ridges. The elasticity of the caudal fin is considerably heightened by this particular arrangement.

The rest of the body is covered with bony little pricks of different size. Those on the head and especially those over the eyes are greatest in size (about 2 m.m.) and closest together. On the flanks of the body these little

pricks are smaller (about 1 m.m.) and farther removed from each other, however they are broader there and form wedge-shaped protuberances, the greatest dimension of which runs parallel with the length of the body. Each of these protuberances rests on a polygonal basis, and all these polygonal bases fit together, forming a sort of mosaic. On the dorsal and anal fin the little pricks are arranged in rows parallel with the longitudinal axis of the fin.

The outer margin of the caudal fin presents dermal ossifications of greater size to the number of eight. These ossicles, the presence of which led Ranzani to set up a separate genus *Ozodura*, may be noticed more or less with the four specimens in the Leyden Museum. They are greatest with the two specimens lacking the folded band, viz. that from the Dutch coast and that captured near Leghorn. The size of these ossicles in the margin of the caudal fin may not improbably one day be made one of the characteristics of the species.

Our specimen was of a dusky-brown colour, whilst the part of the body situated underneath the mouth, the eye and the pectoral fin, and in front of the anal fin was of a silvery tinge. It has been carefully mounted and now makes part of the collections of the Leyden Museum.

NOTE XXXIII.

DESCRIPTION OF A NEW SPECIES OF OLIVA.

BY

M. M. SCHEPMAN.

Oliva Semmelinki, n. sp.

Shell oblong-cylindrical, spire exerted, with an obtuse apex; cream colour with a reddish-brown net-work, leaving triangular spaces, and with blotches of a more purplish tinge beneath the sutures and round the middle. The 3 spiral whorls unspotted, the two next with a reddish callosity occupying the lower part of the whorls. Basal part not divided with a few brown spots. Columella straight, with small whitish plaits, some of which are bifid. Interior of the aperture rose colour.

Total length 16, breadth 6, length of aperture 11 mill.

Hab. Strait of Larentoeke near Flores, collected by Dr. Semmelink.

This species has much the appearance of being a dwarf-form of *O. guttata* var. *mantichores*, but it is much more cylindrical than young specimens of that species. In form it approaches to *australis* but is sufficiently distinct in colour and in other particulars.

NOTE XXXIV.

ZOOLOGICAL RESEARCHES IN LIBERIA.

ON A SERIES OF BIRDS,
COLLECTED BY MR. A. T. DEMERY IN THE DISTRICT
OF GRAND CAPE MOUNT.

BY

J. BÜTTIKOFER.

After having spent nine months' time in our Museum, and thoroughly prepared and fit out to carry on my own investigations, Mr. A. T. Demery, the son of my Liberian huntsman Jackson Demery, left for his mother-country in August last year. Immediately after his arrival he went at work and has sent since, amongst many other objects, two small collections of birds from different parts of the district of Grand Cape Mount in Western Liberia. Many of the birds have been collected in the vicinity of Robertsport, others on the Johnny Creek (a confluent of the Fisherman Lake), and others again at Jarjee, a Golah Town some days travel in the Interior up the Mahfa River. As, besides the two new *Zosterops*, several of the 87 or 88 collected species are new for Liberia, and others being rare or of some interest in another way, I consider it sufficiently important to bring forward a full list of them, the more so as Mr. Demery, in January last, has left Liberia for the Sulymah River in the British Colony of Sierra Leone. The species not contained in my List of Liberian Birds, N. L. M. 1889, p. 129—138, will be marked with an asterisc.

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The species, collected by us in Liberia, have now reached the number of 238.

1. *Asturinnula monogrammica* (Temm.). — Robertsport.

2. *Syrnium nuchale*, Sharpe. — Young female in down, obtained Dec. 4th at Robertsport. (The nestling of about the same age I collected at Monrovia is dated April 22nd).

3. *Scotornis longicauda* (Drap.). — Robertsport.

4. *Hirundo rustica*, L. — Several specimens were collected, the first of which is dated Oct. 12th, the last Nov. 18th.

Having now before me the considerable series of 12 well-sexed and dated Liberian specimens, which are collected in the most different periods of their stay in that country, I will shortly describe the different stages of plumage from their arrival in autumn up to their departure for Europe in spring.

a. Female, shot at Robertsport, 12 October 1889. Upper surface strongly glossed with steel-blue, quills and tail-feathers faintly glossed with green and looking rather worn and faded. The outermost pair of tail-feathers are not developed to full length. A very narrow frontlet and the whole chin and throat are pale rufous, the cross-band on the chest is grayish olive-brown, the rest of the lower surface white, the feathers on the breast intermixed with some rusty ones, certainly indicating the beginning of moulting, under wing-coverts white with a slight vinaceous tinge; white spots on tail-feathers very small. Wing 11 cm., longest tail-feathers 6,2 cm. The specimen makes the impression of being a bird of the year.

b. An unlabelled specimen, shot at Robertsport, at what date I cannot say, but any how before Oct. 20th 1889, as the whole consignment has been shipped for Holland on that day. In size and coloration of the upper surface, throat and pectoral band this specimen resembles N^o. *a*, the lower surface, however, including the under wing- and tail-coverts, is uniformly tinged with vinaceous. Like in the preceding specimen the white spots on the tail-

feathers are smaller than usual, and in consequence of these characters, connected with the inferior size of the bird, I believe it also to be a female of the year.

c. Male, shot at Paynesville on the Messurado River, 23 October 1884. Above glossy steel-blue, quills and tail-feathers strongly glossed with green and narrowly edged with buffy white at the tips. Frontlet narrow and very pale buff, a short superciliary line and entire throat pale rufous, chin white, breast-band broad, uniform pale brown, rest of under surface, including under wing- and tail-coverts, pure white, without the slightest tinge of buff whatever. Wing 12 cM., tail 7 cM. There is no trace of moulting in the whole plumage, but the unabraded state of quills and tail-feathers, the outer ones of which latter are not fully developed, and also the rich metallic gloss on the upper parts indicate that these parts have already got through moulting. The lower parts, however, as described above, cannot be considered as having moulted, and the rather early date — there is no statement of the birds arriving long before October — would hardly allow to assume the full winter-dress. This rather puzzling specimen is the one mentioned as *H. lucida* (N. L. M. 1886, p. 248) and united afterwards (N. L. M. 1889, p. 117) with *H. rustica* on account of the greater length of the wing and the broad dark band running across the fore-neck.

d. Adult female, shot at Robertsport, 15 Nov. 1889. Upper parts probably newly moulted, glossy steel-blue, also all the wing-coverts, most of the secondaries and innermost tail-feathers. Rest of the secondaries, all the primaries and the outer tail-feathers not yet moulted and entirely worn out and abraded. Frontlet very pale and not yet moulted. All the lower parts, including the under wing-coverts, newly moulted; chin and upper throat nearly chestnut-brown, band across the chest glossy steel-green, divided in the centre by some rusty red feathers; rest of lower surface and under wing-coverts vinaceous red. Wing 11,5 cM., tail unfit for measurement, the tips of the outermost feathers being wanting.

e, f. An unsexed specimen, 15 Nov. 1889, and a male, 16 Nov. 1889, both from Robertsport. Both specimens are birds of the year, upper surface glossy steel-green, head smoky gray with some new glossy green feathers, a narrow frontlet dirty white, quills and tail-feathers not yet moulted. Chin and throat pale rusty or nearly white, with some new, chestnut colored feathers, band across the chest with glossy edges to some of the feathers, rest of lower surface through moulting, but not as dark vinaceous red as bird *d*. Wing 12 cM., tail (outermost feathers) 8,2 cM.

N.B. Specimen *e*, having been preserved in spirit, will be used as skeleton.

g, h. Two adult males, shot at Robertsport, 18 December 1889. Both specimens like N^o. *d*, with chin and throat deep chestnut-brown, rest of lower surface strongly tinged with ferrugineous. Quills and tail-feathers moulted in the same way as in N^o *d*, outermost tail-feathers long and very much worn.

i. A female, probably of the year, shot at Robertsport, 18 December 1889. Much paler than the two preceding specimens, much like N^o *b*, the nearly white throat being spotted by many newly moulted rusty red feathers. Outermost tail-feathers not much elongated and unmoulted, as well as the primaries. Wing 11,5 cM.; outermost tail-feathers 6,3 cM.

k. A fully adult male, shot on the Fisherman Lake, 2 December 1880. The whole plumage, with the exception of the primaries and outer tail-feathers, entirely moulted and fully resembling the numbers *d, g* and *h*. The cross-band on the chest is very glossy steel-blue, the lower surface more richly tinged with red than in all the preceding specimens. Wing 12,2 cM., outermost tail-feathers, which are much faded, 11 cM.

l, m. Adult male and female, shot on the Mesurado River, 4 April 1888. Both specimens are entirely moulted and in full dress. Upper surface and band across the chest glossy steel-blue, quills and tail-feathers

strongly glossed with green instead of blue. Frontlet, chin and throat in the male very rich, in the female somewhat less chestnut-brown, lower surface and under wing-coverts in the male rusty red, in the female whitish with only a tinge of rusty. Quills and tail-feathers fully developed in the male, less so in the female. Wing of the male 12 cM., of the female 11,2 cM. Outermost tail-feather of the male 9,2 cM., of the female 6,8 cM.

N.B. A male specimen, in the collection of Mr. Crommelin at Haarlem, shot 14 May 1890 near Haarlem, shows the same rich coloration as the two above mentioned males, but the wing measures only 11,5 cM., the outermost tail-feathers, however, surpass those of the Liberian male, measuring 10,3 cM. in length.

Like Sharpe and Dresser (P. Z. S. L. 1870, p. 244—249) have shown already, our Swallow, at the time of its arrival in the winter-quarters, has the under surface nearly, some of them (N^o *c* of our series) even pure white, and the plumage is very much worn. But shortly after the arrival (not only short before their departure, as is said by Sharpe and Dresser, p. 247) the white color of the underparts by moulting becomes deep buff (see our specimens *d* and *e* of Nov. 15th) and does not change any more before the birds leave for more northern regions. The moulting of the different parts of the plumage takes place in the following order: back and rump, wing-coverts, beginning with the lesser, lower surface and under wing-coverts, crown and hind neck, secondaries and innermost tail-feathers, primaries, beginning with the inner ones, and outermost tail-feathers. This complete moult is thus going on very slowly and takes about the whole time of their stay in the winter-quarters.

5. *Hirundo nigrita*, Gray. — Mahfa River.

*6. *Cypselus apus* (L.).

An adult female, shot at Robertsport, Nov. 7th, plumage not different from that of our European bird.

7. *Eurystomus afer* (Lath.). — Robertsport.

8. *Ispidina picta* (Bodd.). — Mahfa River.
9. *Merops albicollis*, Vieill. — Robertsport.
10. » *gularis*, Shaw. — Mahfa River.
11. *Cinnyris fuliginosus* (Shaw). — Robertsport.
12. » *cyanolaemus* (Jard.). — Jarjee.
13. » *verticalis* (Lath.). — Jarjee.
14. » *obscurus* (Jard.). — Jarjee.
15. » *chloropygius* (Jard.). — Robertsport and Jarjee.
16. » *venustus* (Shaw). — Robertsport.
17. *Anthreptes hypodilus* (Jard.). — Robertsport.
18. » *rectirostris* (Shaw). — Robertsport and Jarjee.

*19. *Zosterops demeryi*, n. sp.

A male specimen from Robertsport.

General color on upper surface olive-green, more intensely so on crown, sides of head, rump and upper tail-coverts, and strongly tinged with gray on hind neck, mantle and wing-coverts. Quills blackish, outer web edged with silvery gray, edges on the secondaries broader and strongly tinged with green. Inner web of all the quills lined with white above as well as below. Wing-coverts dusky, broadly edged with the color of the back. Tail-feathers like quills, outer edges green, innermost pair entirely olive-brown. Front, chin, throat and under tail-coverts sulphur-yellow, a well-defined loreal streak, which is continued backward underneath the eye, pure black, a ring round the eye silky white. Lower surface and flanks ashy gray, strongly tinged with yellow, under wing-coverts and edge of wing white, thighs white, faintly tinged with yellow. Iris brown, bill black, feet gray. Length of wing 5 cM., tail 3,4 cM., culmen 1 cM., leg 1,5 cM.

This species, which I propose to name after its discoverer, differs from the allied *Z. abyssinica* and *Z. polioyaster* by its inferior size, the duller upper surface, and more especially by the yellowish breast and flanks and the silvery gray outer edges of the primaries.

*20. *Zosterops obsoleta*, n. sp.

A male specimen from Robertsport.

Upper surface ashy gray with a very faint olivaceous tinge. Front and whole lower surface dirty white, chin and throat pure white, chest with an isabelline tinge. Lores and eye-ring like in the preceding species. Wing-coverts and quills dusky, the latter and the tail-feathers narrowly edged on the outer web with olive-gray. Inner margin of quills as well as the lower surface of wing white. Iris brown, bill blackish, feet gray. Measurements as in the preceding species.

21. *Cisticola rufa* (Fras.). — Robertsport.

22. *Camaroptera concolor*, Hartl. — Robertsport.

23. » *brenicaudata* (Cretzschm.). — Robertsport.

24. » spec. ?

A probably young female (N^o 65) from Robertsport.

Whole upper surface dull olive-green, quills and wing-coverts broadly margined with yellowish green, under wing-coverts white with a dark spot, the tips of the primary coverts being olive-brown, edge of wing yellow. Lores ashy gray, lower surface of body paler green than above, with a strong tinge of yellow. Breast and abdomen more whitish, tinged with yellow. Measurements as in the preceding species. Iris brown, bill horn-color, yellow at the base of lower mandible.

25. *Cossypha verticalis*, Hartl. — Robertsport.

26. *Turdinus fulvescens* (Cass.). — Robertsport.

27. *Crateropus atripennis*, Sw. — Robertsport.

28. *Criniger barbatus* (Temm.). — Jarjee and Johny Creek.

29. » *verreauxi*, Sharpe. — Jarjee.

30. » *simplex* (Hartl.). — Robertsport.

31. » *indicator*, Verr. — Jarjee.

*32. » *calurus* (Cass.). — An adult male, collected at Jarjee.

Another of the numerous species, hitherto known from the Gaboon and Cameroons only. Iris dark brown, bill grayish black, feet gray.

33. *Chlorocichla gracilirostris* (Strickl.). — Robertsport.
34. *Andropadus curvirostris*, Cass. — Robertsport and Jarjee.
35. » *virens*, Cass. — Robertsport, Mahfa River and Jarjee.
36. *Pycnonotus barbatus* (Desf.). — Robertsport.
*37. *Sylvia hortensis*, Bechst.
Four specimens, collected in November near Robertsport.
No difference between these specimens and those from Europe in summer plumage.
38. *Macronyx croceus* (Vieill.). — Robertsport.
39. *Muscicapa lugens*, Hartl. — Mahfa River. (Male and female, perfectly similar in color).
40. *Platystira cyanea* (P. L. S. Müll.). — Robertsport.
41. *Diaphorophya castanea* (Fras.). — Robertsport and Mahfa River.
*42. *Diaphorophya blissetti*, Sharpe.
Two adult males from Robertsport.
*43. *Megabias flammulatus*, J. & E. Verr.
An adult male was collected in brushwood near Robertsport.
Iris red, bill black, feet dark red.
44. *Dicrurus atripennis*, Sw. — Johny Creek.
*45. *Lanius smithii* (Fras.). — Robertsport.
46. *Nicator chloris* (Less.). — Robertsport and Jarjee.
47. *Chaunonotus sabinei*, J. E. Gray. — Robertsport.
48. *Dryoscopus leucorhynchus* (Hartl.). — Robertsport.
49. *Oriolus brachyrhynchus*, Sw. — Jarjee.
50. *Corvus scapulatus*, Daud. — Robertsport.
51. *Lamprocolius cupreicauda*, Hartl. — Robertsport.
52. *Pholidauges leucogaster* (Gm.). — Fisherman Lake.
53. *Malimbus nitens* (J. E. Gray). — Robertsport and Jarjee.
54. » *scutatus* (Cass.). — Jarjee.
55. *Ploceus nigerrimus*, Vieill. — Jarjee.
56. » *castaneofuscus*, Less. — Robertsport.
57. » *aurantius* (Vieill.). — Robertsport.
58. » *brachypterus*, Sw. — Robertsport.
59. *Pyromelana flammiceps* (Sw.). — Robertsport.
60. *Vidua principalis* (L.). — Robertsport.

61. *Estrelda melpoda* (Vieill.). — Robertsport.

Besides many specimens in usual dress, there are three albinos, all shot together on the same spot. The red on cheeks and upper tail-coverts is somewhat fainter than usual, the whole rest of the plumage is pure white. This is the only evidence of albinisme I ever met with in Liberian birds.

62. *Spermospiza haematina* (Vieill.). — Mahfa River.

63. *Pyrenestes personatus*, Dubus. — Robertsport.

64. *Spermestes fringilloides* (Lafr.). — Robertsport.

65. » *bicolor* (Fras.). — Robertsport.

66. *Nigrita emiliae*, Sharpe. — Jarjee.

67. » *bicolor* (Fras.). — Jarjee.

68. *Lophoceros semifasciatus* (Temm.). — Mahfa River.

69. *Psittacus timneh*, Fras. — Robertsport.

70. *Megalaema duchaillui* (Cass.). — Mahfa River.

71. » *subsulphurea* (Fras.). — Robertsport.

72. » *atroflava* (Blumenb.). — Jarjee.

73. » *scolopacea* (Bp.). — Robertsport.

74. *Dendropicus lugubris*, Hartl. — Robertsport.

75. *Campothera maculosa* (Val.). — Jarjee.

76. » *caroli* (Malh.). — Johnny Creek.

77. *Centropus francisci*, Bp. — Robertsport and Mahfa River.

Both specimens (nestlings) show the same peculiarities in plumage as the male nestling mentioned by me in N. L. M. 1886, p. 223, though they are females, having the feathers on head, neck, chest and mantle black without being intermixed with red ones.

78. *Centropus senegalensis* (L.). — Robertsport.

Besides an adult male there are three young (half grown) males with the lower surface strongly tinged with ferrugineous. The mantle, wing-coverts and in one of the specimens also the tertiaries are brown and strongly banded with black, while in the third the tertiaries and also the outer edges of the inner secondaries are uniform black with a greenish gloss, though not as splendid as the tail-feathers.

79. *Ceuthmochares aeneus* (Vieill.). — Robertsport.

An adult male with blue gloss and black bill.

80. *Chrysococcyx klaasii* (Steph.). — Robertsport.
81. *Treron calva* (Temm.). — Robertsport.
82. *Peristera puella*, Schl. — Mahfa River.
83. » *afra* (L.). — Robertsport.
84. » *tympaistris* (Temm.). — Robertsport.
85. *Francolinus ahantensis*, Temm. — Fisherman Lake.
86. *Oediconemus vermiculatus*, Cab. — Sea-shore near Robertsport.

*87. *Charadrius forbesi* (Shelley).

Charadrius indicus, Schl. Mus. P.-B., Cursores, p. 25.

Charadrius forbesi, Seebohm, Charadriidae, p. 136.

An adult female, collected near the mouth of the Mahfa River.

Iris brown, eye-lid and base of lower mandible orange-red, rest of bill black, feet flesh-color. The specimen, mentioned as *Charadrius indicus* in Schlegel's Catalogue and said to come from Nepal and to be presented by Hodgson, is a true *Ch. forbesi*.

88. *Botaurus leucolophus* (Jard.). — Fisherman Lake.

Leyden Museum, June 1890.

NOTE XXXV.

DESCRIPTION D'UNE ESPÈCE NOUVELLE DU GENRE
ECTATORHINUS

(COLEOPTERA: fam. CURCULIONIDAE).

PAR

W. ROELOFS.

Monsieur Neervoort van de Poll ayant reçu récemment avec d'autres insectes une nouvelle espèce d'*Ectatorhinus*, capturée dans l'intérieur de Bedagei (Deli, Sumatra orient.) par M. J. Z. Kannegieter, m'a invité de la décrire, ce que je fais avec d'autant plus de plaisir que j'avais décrit dans le temps une autre espèce du genre ¹⁾ provenant de la même île que la nouvelle espèce qui est bien distincte des autres et d'une forme remarquable. J'ai conservé le nom que M. van de Poll lui a donné et qui est parfaitement bien choisi.

Ectatorhinus alatus v. d. Poll, in litt.

D'un noir-brunâtre; dessus peu densément garni d'écaill-les brunes, dessous couvert de poils brun-jaunâtres. Ely-tres pourvues derrière les épaules d'une lame saillante, dénudée. — ♂. Long. 12 millim. rostr. excl.

D'une forme moins massive que les autres espèces du genre; d'un noir-brunâtre; le dessus garni d'écaill-les brunes.

Rostre moins long que la moitié du corps, sa moitié posté-rieure garnie d'écaill-les, pourvue d'une carène médiane, accompagnée de chaque côté de deux carènes obsolètes; sa moitié antérieure lisse et dénudée. — Antennes insérées un peu en arrière du milieu, leur scape restant éloigné des

1) *Ectatorhinus Hasseltii* Roelofs, Notes from the Leyden Museum. Vol. II (1880) p. 231; — Deutsche Entomologische Zeitschrift. Bd. XXIV (1880) p. 141; — Midden-Sumatra. Coleoptera. p. 117.

yeux; articles du funicule subégaux, garnis d'écailles et de poils de la même couleur; massue d'un brun-noirâtre velouté.

Prothorax peu élargi sur les côtés, portant une carène lisse médiane et des rainures longitudinales séparées par des côtes élevées; les deux côtes ou carènes de chaque côté de la carène centrale sont au milieu plus élevées que les autres. — Les bords latéraux du prothorax portent des écailles d'un brun-jaunâtre et une petite ligne blanche se divisant en deux rameaux en avant. — Sur le disque du prothorax on distingue quelques écailles blanches sur une ligne transversale. — Ecusson ovale, allongé, dénudé.

Élytres peu élargies sur les côtés, graduellement rétrécies en arrière, munies de stries de gros points; les intervalles des stries étroits. L'intervalle à côté de la suture moins élevé que les autres, le troisième portant trois protubérances dentiformes rapprochées; le cinquième intervalle porte un peu au delà du milieu un tubercule moins appariant et sur la déclivité postérieure se voit une pointe encore moins élevée. — Derrière l'épaule des élytres se trouve une grande lame saillante dégarnie d'écailles. — Vers le milieu de la suture se voit une tache d'un brun clair veloutée, suivie d'une tache noire; on distingue des écailles blanches à la base et sur la face antérieure de la dernière dent du troisième intervalle, une petite tache de la même couleur sur le septième intervalle vers le tiers postérieur et quelques gouttelettes sur les bords et le bout des élytres.

Le dessous est couvert de poils brun-jaunâtres, assez longs sur le metasternum.

Les pattes sont décorées d'anneaux blancs, plus ou moins en zigzag. — Les hanches antérieures se prolongent dans une pointe un peu recourbée.

L'élargissement en forme de plaque ou lame dénudée derrière l'épaule des élytres constitue le caractère le plus distinctif de l'espèce.

NOTE XXXVI.

EXTRACT FROM A LETTER ADDRESSED TO
DR. F. A. JENTINK

BY

Mr. J. D. PASTEUR,

dated Padang Sidempoean, July 1st 1890.

»I take advantage of this opportunity to send you a small box containing a piece of a telegraph pole (of djatiwood, *Tectona grandis*) with two Wood-peckers, *Picus analis*, from Java, Kediri Residency. These birds make, as you see, rather large holes in the teakwood, which is as hard as iron, near the point where the isolator has been attached: apparently because they mistake the well known buzzing of the quavering wire-threads of the telegraph for the gnawing and boring of Insects.

I should not have mentioned this fact if it was not such a great rarity. For on the Paris electricity exhibition in 1881 there was to be seen as a great rarity a telegraph pole perforated through and through by a hole having a diameter of 7 centimeters: this remarkable pole was sent by the Director of the Norway telegraphs. The administration for a long time was uncertain to what cause ascribe this damage done to poles which for the rest were entirely sound, till at last by a mere chance the Wood-peckers were seen at work.

In Norway too has been observed another not less remarkable damage caused to telegraph poles and also for a long

time inexplicable. The large stones which are heaped up at the base of the telegraph poles in order to increase their solidity sometimes were found removed and dispersed. Finally it was observed that this damage was caused by Bears, which apparently mistook the mysterious noise in the poles for the buzzing of a swarm of bees.

In my quality of Inspector of the post- and telegraphic service I inspected thousands of telegraph poles, but only in a few cases I could state the damage caused by Wood-peckers and then always on the living kapok-trees (*Eriodendron anfractuosum*) which are used here for this purpose. The piece of telegraph pole sent to you is the only example known to me that the Wood-peckers extend their damage to the sound and very hard poles of djatiwood. Besides the above mentioned Wood-pecker we saw from time to time the rare little *Picus moluccensis* at work among the other ones."

NOTE XXXVII.

ON STREPSICEROS KUDU AND STREPSICEROS
IMBERBIS.

BY

Dr. F. A. JENTINK.

August 1890.

(Plate 9).

In a »notice of two overlooked species of Antelope” by Mr. Edward Blyth (P. Z. S. L. 1869) we read on p. 55 the following passage: »Dr. Gray, in his »List of specimens »of Mammalia in the British Museum” (1850, p. 143), »under *Strepticeros kudu* notices »Var. smaller. Inhabits »Abyssinia; Mus. E. I. C.; Mus. Frankfort, adult and »young.” I consider this small kudu, of which adults of »both sexes are figured and described by Sir Andrew »Smith, to be decidedly a well-marked species; and there- »fore I now propose for it the name of *Strepticeros imberbis*.”

As Dr. Gray did not publish in 1850 a book entitled »List of specimens of Mammalia in the British Museum”, Mr. Blyth apparently meant herewith the well-known »Catalogue of the specimens of Mammalia in the collection of the British Museum” published by Dr. Gray in 1852; and here we find on p. 134 (not 143 Blyth) under the head *Strepsiceros* (not *Strepticeros* Blyth) *kudu*: »var. 1. Smaller. — *Mus. Ind. Comp. Lond. and Frankfort. Antelope Tendall* ¹⁾, *Rüppell, Abyssinia*, 22; *Fischer, Syn.* 475.

1) *Tendal* (not *Tendall* Gray) is the name given by the Arabs (Cf. Rüppell's Atlas, 1826, p. 22) to an *Antelope*, described by Rüppell as follows: »Grösse

Antilope chora, Rüppell, *Abyssinia*, 22; Fischer, *Syn.* 475. Hab. Abyssinia."

If Mr. Blyth merely had read Smith's description above mentioned and compared it with Smith's figures of ♂ and ♀ of *Damalis* (*Strepsiceros*) *capensis*, he certainly would not have suggested that these figures truly represented adult specimens of his new species, *Strepsiceros* (not *Strepticerus* Blyth) *imberbis*, and Mr. Blyth is not quite right where he writes, l. c. p. 52, that the male figured by Smith shows *not a trace* of the fringe of long hairs down the front of the neck with which the male of the *Strepsiceros kudu* so copiously is adorned; I remark that the figure shows correctly, although feebly, the named fringe down the front of the neck, and that Smith described it very correctly in the following terms: »the neck is robust, rather long, *fringed both above and below*, with some long and coarse hair which superiorly forms a sort of mane, about three and a half inches high and which extends from the base of the horns to the hinder edge of the shoulders; *inferiorly the long hair is irregularly disposed and forms a thin shaggy coating to the throat.*"

Like Mr. Blyth in 1869 so Dr. Sclater in 1884 overlooked Smith's accurately drawn description and apparently too was induced in error by the but feebly represented fringe in the figure. Dr. Sclater however seems to have been in dubio, for he wrote (P. Z. S. L. 1884, p. 48): »Whether *Damalis capensis* as represented on plate 42 of Smith's illustrations really belongs to *S. imberbis*, as supposed by Blyth, is, I think, very doubtful. *It is true, the neck has no fringe*, but the horns have the open spiral of *S. kudu*

eines Pferdes; Hörner schwarz und gewunden, wie bei den *Addax*, aber viel grösser und dicker; Hauptfarbe rothbraun; Stirn schwarz; Hinterfüsse schwärzlich; Schwanzquaste sehr lang." Notwithstanding Rüppell in his »Neue Wirbelthiere" 1835—40, p. 26, said that *Tendal* is the name given by the Arabs to *Strepsiceros kudu* which has a »Haarkamm längs des ganzen Vorderhalses", Gray called in 1852 and later in his Handlist, 1873, always the *Str. imberbis*, *Str. tendal*.

and, so far as we know at present, *S. imberbis* is only met with for certain in Somali-land."

As I hope to demonstrate, the form, position and length of the horns just are striking proofs that Smith's *Damalis capensis* was a true *Strepsiceros kudu*. Although we find some figures and measurements of horns by Gray, Blyth, Smith, Selater and others, nobody hitherto has paid attention to the great variation in position of those parts, nor to their form if very adult; therefore nearly never the given figures agree with their measurements or inversely. And as the proportion between the distance of the points of the horns and their length changes with the age of the individual and moreover is not constant in the individuals of the same age, so it is evident that measurements without figure or without nearer description of the form of the horn have no value at all. But if figures of a pair of horns are given, it therefore is a desideratum that they should agree with the measurements exhibited in the text. In this point, however, our *kudu* has been very unfortunate: so Smith said that of his *D. capensis* the length of the horns was 3 feet and the distance between the horns at points 2 feet 7 inches; the proportion being thus 1 to 0.86, meanwhile the proportion in the figure (nearly front view of the horns) is about 1 to 0.6! So in Selater's figure, P. Z. S. L. 1884, p. 47, fig. 2 (not fig. 1 to bottom of that page), of the horns of *Str. kudu* the proportion is 1 to 0.7, meanwhile the proportion between the measurements on p. 46 is 1 to 1.06! In both cases the reader is in dubio.

There are two fine drawings of head with horns of *Str. kudu* on plate II of Fr. Courteney Selous' »A hunter's wanderings in Africa, 1890". He merely records the length of the horns and it therefore is impossible to know if they have been represented in a natural and true position.

There are in our Museum a large series of fine Koodoo-horns, some of which have been drawn on plate 9 after photographs. This series will clearly demonstrate the enor-

mous variation in general form of the horns and at the same time show the variation due to age.

The measurements of the horns figured on plate 9 are the following (in Centimeters):

	Length	Distance	Proportion
<i>l.</i> (Cat. Ost. 1887, p. 140)	79	70	1: 0.88
<i>g.</i> " " " " "	99	80	1: 0.81
<i>k.</i> " " " " "	93	50	1: 0.54
<i>n.</i> " " " " "	73	79	1: 1.08
<i>c.</i> " " " " "	97	110	1: 1.13

The most developed horn of the Koodoo presents two arches on both sides of the horn, therefore the figure given by Sclater (P. Z. S. L. 1884) and those on plate 9, figs. *g* and *k*, represent horns of very adult specimens; the horns figured by Smith, Blyth (P. Z. S. L. 1869, fig. 1) and on plate 9, *c*, represent a younger stadium, meanwhile the figures by Blyth (l. c. fig. 2) and on plate 9, *l* and *n*, represent half grown horns. From the named figures it will be clear to understand how the proportion between the length of the horns and the distance of their points must vary with the different age of the same individual, and alternately must increase and decrease according to age.

If we carefully study the figures on plate 9 we recognize as it were three different types, one represented by *k* slender and elegant, one represented by *c* very broadly developed horns of a very great size, and finally the form represented by *g* somewhat intermediate between *k* and *c*, longer but less slender than *k*, not so strongly developed but more elegant than *c*; *l* shows the halfgrown stadium of *g* and *n* the halfgrown stadium of *c*.

The Lesser Koodoo (*Str. imberbis*) resembles a miniature specimen of stadium *k* if we look at the horns, and therefore its horns never can be confounded with those of Koodoos of the types *c*, *g* nor *k*, being slender and elegant like *k*, but always the very small size — nay if adult — gives the finishing stroke; moreover the *imberbis*-horns never show the open spiral so constant in the *kudu*, as

already pointed out by Blyth, Sclater and others. Blyth, Sclater and Willoughby¹⁾ have published drawings of the horns of *Str. imberbis*: those given by Blyth, l. c. p. 54, represent loose horns and therefore learn nothing as to their position; the horn from base to tip measures $19\frac{1}{2}$ inches in a straight line and the greatest width apart (at the tips) is 12 inches, the proportion thus 1 to 0.6; the horns are however those of a two-thirds grown specimen; Dr. Sclater's figure (l. c. p. 47, fig. 1, *not* fig. 2) accords very well with the measurements on p. 46, the proportion of the latter being 1 to 0.48 and of the former 1 to 0.44, the figure thus gives a very good impression of the relative position of the horns; Captain Willoughby gives the length of horns from base to tips in a straight line 17 inches, width between the tips 14 inches (see explanation of plate 1²⁾), the proportion thus being 1 to 0.82, in the figure (front view) however the proportion is 1 to 0.54! The reason is that the length of the horns is about half an inch too great in the figure, meanwhile the distance of the tips has been accurately drawn at $\frac{1}{15}$ natural size: in the side view (see the same plate) the horns have been drawn still longer! at about $\frac{1}{10}$ instead of $\frac{1}{15}$ natural size! It is a great pity that the named figures have not accurately been drawn, because they are hitherto the only figures of a head with horns of an adult Lesser Koodoo.

In the P. Z. S. L., 1884, is a beautifully colored plate of a young male specimen of the Lesser Koodoo (Plate IV) and our Museum has purchased a specimen of the same size which died some time ago in the London Zoological Gardens; according to Mr. Frank E. Beddard the locality of this specimen was Malindi, north of Mombas. As we possess also a young male specimen of about the same age of *Str. kudu*, I will try to trace the external differences

1) East Africa and its big game, by Captain Sir John C. Willoughby, Bart., 1889, plate 1, figs. 2, 2.

2) By a mistake apparently he calls here the Lesser Koodoo, *Str. kudu*, instead of *Str. imberbis*.

between the two species in young condition and to compare as far as possible their skulls. As I am not happy enough to possess an adult skin nor adult skull of *Str. imberbis*, I am forced to confine myself to a mere comparative study of the young ones, the external form moreover and the color of *Str. kudu* have been so often described and there are specimens in so many Museums that this species in adult stage needs no new description, meanwhile the adult Lesser Koodoo seems not to differ very much from the young in color, as stated by Dr. Noack (Der Zoologische Garten, 1886, p. 40) who described one of Menges' *Aderio* or *Str. imberbis* as follows: »das Thier war ein noch nicht ganz erwachsenes Weibchen, welches in der Färbung genau mit dem Proc. Zool. Soc. London, 1884, abgebildeten Bock übereinstimmte. Die Rückenhöhe desselben betrug etwa 66 cm." A comparative description of the adult skull of *Str. imberbis* however remains still a desideratum.

There is a young female specimen of *Str. kudu* figured in Gray's Knowsley's Menagerie, 1850, pl. 24, fig. 2, and the named author states, l. c. p. 26: »in the Frankfort Museum there is a male and female adult, a half-grown and young specimens; in the India House Museum is another specimen, all from Abyssinia. They do not appear to differ from the Cape specimens, except in being smaller." As the specimen from the India House Museum has turned out to be a true *imberbis*, Messrs. Gray, Blyth and Selater had reason to suppose that there is in the Frankfort Museum a whole and complete series of this interesting species!

Dr. Noll at Frankfort, however, kindly furnished me with the following information: »Das Senckenbergische Museum zu Frankfurt a. M. besitzt 4 Kudu Antilopen, 1 ♂ und 2 ♀ ad. und 1 ♂ juv. Dieselben sind 1834 von Dr. Ed. Rüppell in Abyssinien erlegt. ♂ und 1 ♀ sind gut behaart, das ♀ heller braun mit 8 weisslichen Streifen, das andere ♀ ist schlecht im Haar, die Streifen nur angedeutet, das Junge hat 5 Streifen, das alte ♂ 7 Streifen,

wovon 3 auf den Hinterbacken. Die Nackenmähne ist bei den 3 ad. noch teilweise vorhanden, am meisten bei dem ♂. Dies allein hat *den starken Haarkamm an der Unterseite des Kopfes von dessen Mitte an und am Halse*, die ♀ nichts davon. *Bei dem Jungen ist er schon angedeutet*; wo er an den Vorderbeinen aufhört, beginnt bei dem Jungen ♂ eine schwarze Linie in der Mitte des Bauches, die sich vor dem Penis erweitert und einen ovalen weissen Fleck einschliesst. Die Länge der Hörner beträgt bei dem ♂ in gerader Linie 85 cm., der Kante auf den Windungen (Leiste) entlang 113 cm. Der Abstand der Spitzen der Hörner von einander ist 87 cm."

The above cited communication shows to evidence that the Frankfort specimens are true Koodoos, *Str. kudu*, as is indicated by the maned underparts of the neck, by the open spiral of the horns (113 cm.), and by the position of the horns which agrees nearly with the third type, distinguished by me on p. 214 (see plate 9, fig. c). The relative shortness (85 cm.) of the horns demonstrates that the specimen had not yet attained its full development, and so we understand how Gray could write of the Frankfort-Koodoos »smaller" (in Knowsley's Menagerie), but Gray, Blyth and Sclater were mistaken where they distinguished these specimens from the true *kudu*, under the name *tendal* or *imberbis*.

Our young male *Str. kudu* died in December 1878 in the Amsterdam Zoological Gardens; it is a little younger than our young *imberbis*-male, as its smaller horns and less developed dentition clearly demonstrate. Its greater size however immediately points out that it belongs to a form larger in every age.

Measurements in centimeters: *kudu. imberbis.*

Height at the shoulders 97 83

Length of horns. 9 9

Distance between their tips 17.5 9

» » eye and end of muzzle 17 14

Length of ear 19 14

Circumference at base of horns. 10 8

In a somewhat older male of *Str. kudu*, died in Amsterdam (March 1879) and at present in our Museum, the following dimensions are not without interest:

	cm.
Length of horns (no trace of spirature)	23
Distance between their tips	31
Circumference at the base	14

The horns of the young *kudu* are round at the base and show no trace of the well developed prominent angulation in the *imberbis* of about the same age and in the older *kudu*-specimen. Very remarkable is the different position of the horns with respect to the skull, resp. to the head; in the young *kudu* the horns are placed nearly in one plain with nose and forehead, about like in *Anoa depressicornis*, meanwhile in the young *imberbis* they form an angle with the head, about like in *Portax picta*.

The fur of the *imberbis* generally is much more lively colored, with a darker hue and the white stripes and ditto patches are more prominent. This darker hue results from the fact that the *kudu* has the hairs uniformly colored from base to tip, a few hairs having black tips, meanwhile in *imberbis*, with a few exceptions, all the hairs are black-tipped: moreover the brown color in *kudu* may be called a dirty rufous and in *imberbis* a fine chestnut.

The dark colored mane running from between the horns along the spine of the back pass away at a certain distance above the shoulders and is substituted by a pure white line ending at a short distance from the base of the tail: in our young *kudu* this white line is interrupted near its end by broad dark colored stripes.

From this white line descend the well known stripes, pure white and very striking in *imberbis*, dirty white and very indistinct, often nearly imperceptible, in *kudu*: the number of these stripes is very inconstant and is different on both sides in the same specimen, but always much greater in *imberbis* than in *kudu*: in our young *imberbis* there are 12 stripes on the right side and 13 on the left,

between them are spread some pure white spots especially on the thighs; our young *kudu* shows 6 indistinct stripes on each side, our old male has 9 and the female 6 stripes. Mr. Huet ascribes to the species »7 lignes verticales'', Josef Menges 4—5, Dr. Noll 5, 7 and 8, Dr. Noack 7, Smith 7—8 in ♂, and in ♀ the number is generally greater, some of them occasionally bifurcate, and the white is less pure; Hamilton Smith (1827) assured that the ♂ has four or five white lines from behind the shoulders to the hips, and two, three or four more across the croup, forming in all eight or nine cross streaks, the ♀ is faintly marked with three or four cross lines on the sides and one or none on the thighs, meanwhile in the calves the marks are less perceptible; according to Schreber there are »7—9 mehr oder weniger deutliche, weisse Querstreifen an den beiden Seiten. Die Länge, Zahl und Vertheilung derselben ist abweichend, so wie auch selbst der weisse Streifen auf dem Rückengrath bisweilen gar nicht vorhanden ist. Die Seitenstreifen sind bei den Weibchen schwächer, auch scheinen sie sich überhaupt mit zunehmendem Alter zu vermindern. Bei einem jungen Ex. in der Par. Gallerie lassen sich 9 Seitenstreifen deutlich bemerken, bei einem ausgewachsenen sind nur 7 derselben vollkommen sichtbar, die drei übrigen kaum zu unterscheiden."

According to Dr. Sclater's figure in P. Z. S. L. 1884, there are in *imberbis* about 11 stripes, Josef Menges reports 12 to 15, Dr. Noack 11 to 13 and Mr. Huet 12.

In conclusion the number of white stripes in *kudu* never exceeds 10 and in *imberbis* always is greater than 10.

In *kudu* the throat is adorned with a mane, in *imberbis* with the well known two large pure white spots, but what is unknown and very interesting is that our young *kudu* shows a well developed fringe of hairs or mane, and at the same time represents the two white spots of the *imberbis*, although in smaller dimensions but on about the same place on the throat, and the mane hairs at these white spots are white colored, thus very strikingly con-

trasting with the more or less dark brown color of the rest of the mane.

Smith relates that »the sides of the head (of *Str. kudu*) are variegated with several small irregular white spots, one in front of each ear, one under each lower eyelid and one on each cheek." It seems to me that only two cheek-spots are rather constantly present as well in *kudu* as in *imberbis*, although in our halfgrown specimen of *kudu* no cheek-spots are perceptible, in our young *kudu* the left cheek only has one spot and Mr. Selous figures in his »Hunter's wanderings in Africa" two *kudu*-heads each with three cheek-spots: I suppose that we have here to do with abnormalities.

In our young *imberbis* the so very characteristic white angular line on the nose is not yet wholly developed, the top of the angle is wanting.

The tail near its basal part bears a pure white circle in our young *imberbis*, not present in our young *kudu*.

In the skulls of our young *kudu* and *imberbis* there are some striking features which I shortly wish to point out. The coronoid process is surprisingly much more arched and bent down in *kudu*; although the greatest length of the *kudu*-skull measures about 3 centimeters more than the same length in *imberbis*, the distance between the first upperpremolar and the end of the premaxilla differs only 3 millimeters in the two skulls; the *kudu* has the bony palate much more concave and this for a greater extent, and the hindmost part of the palate ends in *kudu* more in a curved line and in *imberbis* in a rather sharp angle.

In some Antelopes: *Anoa depressicornis*, *Kobus ellipsiprymnus*, *Aepyceros melampus*, *Euryceros euryceros*, *Tragelaphus sylvaticus* and *Oreas oreas*, each nasal bone presents a more or less deep incision, so that the nasal bones may be called bilobate: in *oreas* the incision is very deep, dividing that bone in a very elongate outer lobe and a shorter inner lobe. In *kudu* and *imberbis* the deep incision divides each nasal bone in two very elongate lobes of about the same length.

Str. kudu has been met with from Abyssinia to the Cape Colony, where it is still fairly abundant in the eastern province (see Bryden's Kloof and Karroo, 1889, p. 292); *kudu* and *imberbis* (according to Dr. Noack, der Zoologische Garten, 1886, p. 42) leben nebeneinander in den Gebirgen der Somalihalbinsel auf trockenem Felsboden; Josef Menges (Petermann's Mittheilungen, 1884, p. 408) reports »die kleine Kudu Antilope (Aderio) des Somalilandes ist im ganzen Gebirge noch zahlreicher als die grosse Art." From Somali-land the *imberbis* has been found southward to till the Juba River, as we know from a letter written to Dr. Sclater by Mr. F. Holmwood, Consul at Zanzibar (P. Z. S. L. 1884, p. 48) with the following note: »I have seen the dwarf-koodoo in the neighbourhood of the Juba River, which is exactly under the Equator."

In »Zoologischer Jahrbücher, 1887, p. 210" we find a very strange statement. Dr. Th. Noack relates: »*Streps. imberbis* kommt nach einem vom Prinzen Samson Dido nach Hamburg gebrachten Fell eines Pullus auch in West-Afrika vor."

NOTE XXXVIII.

ON TWO VERY RARE, NEARLY FORGOTTEN AND
OFTEN MISUNDERSTOOD MAMMALS FROM THE
MALAYAN ARCHIPELAGO.

BY

Dr. F. A. JENTINK.

September 1890.

Pithechir melanurus S. Müller. (Plate 9).

Among other papers and drawings belonging to the inheritance of the lamented Alfred Duvaucel, there was a drawing of an animal, reproduced in the well known splendid work entitled »Histoire naturelle des Mammifères”, and described after that drawing by Mr. F. Cuvier.

Cuvier called the animal »le Pithéchéir ou Pithéchir mélanure” and characterized it in the following terms: »ce Mammifère se rapproche des Rats et des Sarigues, sans toutefois pouvoir être réuni intimement ni à l’un ni à l’autre de ces genres. La tête et la queue rappellent la tête et la queue des Rats, tandis que les pieds de derrière et un peu la tête rappellent les Pélimanes américains. Mais les pouces, très-séparés aux pieds de derrière, avec un ongle plat, et ceux des pieds de devant, quoique très courts, garnis aussi d’ongles aplatis et paraissant également opposables aux autres doigts, ne permettent pas d’admettre cet animal parmi les Rats; on ne peut pas davantage le considérer comme une Sarigue, à cause de ce pouce des membres antérieurs et de sa queue non prenante. D’après ces caractères, tirés des organes du mouvement, le Pithéchéir nous présenterait le type d’un genre nouveau, et

probablement de l'ordre des Rongeurs ou de la famille des Pédimanes; mais cette question restera douteuse jusqu'à ce qu'on ait connaissance de son système de dentition. Les couleurs de son pelage, d'un beau fauve uniforme et sa queue noire l'éloignent également des genres dont nous venons de parler. En effet, toutes les espèces qui constituent ces genres sont revêtues d'un pelage terne, et elles sont en assez grand nombre pour qu'on puisse en induire qu'il n'est pas dans leur nature qu'elles soient revêtues d'un pelage brillant.

Je puis indiquer ni la taille de cet animal ni sa patrie. Sous le premier rapport, en le jugeant par analogie, nous lui donnerions la taille d'un grand Rat. Quant aux contrées où il vit et où il se trouvera sans doute un jour, j'ai lieu de présumer, de l'époque où il m'est parvenu et des peintures qui accompagnaient la sienne, qu'il est originaire des provinces du Nord de Bengale, si ce n'est des parties occidentales de Sumatra (Février 1833)."

The colored figure which accompanies Cuvier's clear and elegant description is indicated as being »de grandeur naturelle". From the foregoing the questions arise, 1° as to the true habitat of the animal, 2° its size, 3° if it is a Rodent, a Marsupial or if it belongs to another order, and finally, 4° if Duvaucel's figure accurately represents the animal? It generally is an unknown fact, that, meanwhile the Pithéchir mélanure is not to be found represented in any other Museum, there are two well preserved specimens in the Leyden Museum. These individuals have been collected in 1834 by S. Müller, the zealed member of the so called *Natuurkundige Commissie* (Physical Commission). This most interesting discovery has been mentioned in a few words by S. Müller in the first part of the »*Verhandelingen over de natuurlijke Geschiedenis der Nederlandsche Overzeesche bezittingen, Zoologie, 1839, p. 36*"; we read there: »we procured a specimen of the red bushrat, figured by Fr. Cuvier as Pithéchir mélanure, in Java, to the northern side of Mount Gédé, at an elevation of about 1600 me-

ters above the level of the sea; the people were felling a tree, in a hollow branch of which the animal had its nest, made from moss and wherein it apparently had been sleeping and so we get it by chance." In an enumeration of the collected animals l. c. the named author (Dr. S. Müller) called the species *Pithechir melanurus*. — Our second specimen is from Sumatra and was likewise collected by S. Müller. Although I always and again and again have fixed the attention of officers, collectors and travellers upon the animal in question and often supported their memory by colored drawings, nobody has been happy enough to procure nor even to observe it.

Professor Schlegel twice mentioned the species, viz.: in »Handleiding tot de beoefening der Dierkunde, 1857, T. I, p. 70", where he said that it is an animal from Java and Deccan, and in »De Dierentuin, 1872, p. 77", with the localities Java and Hindostan.

Mr. Paul Gervais (Histoire naturelle des Mammifères, 1854, T. I, p. 275) gives a very bad reproduction of Cuvier's fine colored plate, calls the genus »*Pithecheirus* Cuvier" and the species »*Pithecheirus melanurus* Cuvier" (Cuvier has not given a latin or greek title to our animal before the year 1842 (table générale, p. 4), when he called the species *Pithecheir melanurus*, but Dr. S. Müller, see antea) and remarks: »à en juger par la figure due à Duvaucel, le Pithéchéir me semble avoir bien plus d'analogie avec les *Ptilocerques* qu' avec les Rongeurs, mais je ne puis donner à l'appui de ce rapprochement aucune observation précise, n'ayant observé le Pithéchéir dans aucun des Musées que j'ai visités." If Mr. Gervais had paid a »visite" to the Leyden Museum before making such an improbable hypothesis, he would have seen two specimens of the species in question!

Professor J. van der Hoeven wrote a short paper concerning our animal, in 1859, »Verslagen en Mededeelingen der Koninklijke Akademie van Wetenschappen, deel 9, p. 50", translated in Annals and Magazine of natural history, 1859, Vol. III, p. 470. Prof. van der Hoeven mentions both specimens in our collection and made the following

ingenious and exact remarks: that the tail is not black so that the name *melanurus* is not applicable to the animal, that the Java-specimen has the belly whitish, that the skull is wanting; and he suggested that the teeth must resemble those of other species of the genus *Mus*: moreover v. d. Hoeven gives some measurements of body and tail.

Dr. Trouessart (Catalogue des Mammifères vivants et fossiles, Rongeurs, 1881, corrigenda) accepted Gervais' statement, called the *Pithechir melanurus* S. Müller, *Pithecheirus melanurus* F. Cuvier, and did not mention the well-known »Verhandelingen.»

There is in the Berlin Museum a small mouse, described and figured by Professor Peters in 1868 (Monatsb. d. kön. Preuss. Akad. d. Wissensch. zu Berlin, p. 448, pl. 1), from an unknown locality (der Fundort ist wahrscheinlich in Africa zu suchen). Peters bestowed upon it the name of *Chiropodomys penicillatus*. Dr. Trouessart (l. c.) remarked: »M. le Professeur Peters de Berlin nous informe que le *Chiropodomys penicillatus* est identique au *Pithecheirus melanurus* de Fr. Cuvier, et que, selon toute probabilité, la patrie de cette espèce est bien Java et non l'Afrique ouest." I have seen this little creature and could convince myself and Dr. Peters too that it has nothing to do with our *P. melanurus*, as it is nearly fullgrown (see the dentition in Peters' figures) and attains about half the size of the latter; moreover Peters said »cauda pilis setaceis brevibus, versus apicem longioribus vestita" (see the tail in Peters' figure) meanwhile *P. melanurus* has not a trace of a *tufted* tail, a. s. o.

It is a fact avowed by every naturalist, that the Leyden Museum contains one of the largest collections of the whole world, and it is a fact too well known and deplored by all zoologists, that the number of scientific men, assigned to preserve and to study those immense collections, is inferior to that of the scientific workers in the entomological department of the British Museum. And if therefore for our scientific staff it at present is an impossibility to

survey all our invaluable treasures, it will be somewhat comprehensible, how the things stand in our Museum some 30, 40 years ago, when the scientific workers were still less in number than at present, and just at that time the collections were increasing day by day!

Under such bad circumstances a great deal of work remained undone and many valuable specimen was getting away or lost for ever! Several years successively Prof. Schlegel had all the Vertebrates under his charge! It therefore was no wonder that I found in 1875 several hundred skulls, belonging to stuffed mammals; these skulls were uncleaned and not always carefully labeled. In the course of years I happened to bring order in that mass, although as a matter of course not always without mistakes, and so merely a couple of dozens still remained undetermined. Among the latter my friend Oldfield Thomas from the British Museum met with two skulls labeled »Java and Sumatra, 1834" and bearing the same marks as the stuffed specimens of *P. melanurus* in the collection, and with a very high grade of probability I labeled these skulls as belonging to our specimens of the named species, and exhibited them under that name in my Catalogue ostéologique, 1887, p. 215, although with a note of interrogation.

Having not detected in our Museum other Mice-specimens to which these skulls may belong, I now am convinced that we have here the two wanting skulls of the stuffed specimens of *P. melanurus*. The skull of the Java-specimen has been reproduced on plate 9, figs 1, 2, 3 and 4.

The following measurements are those of the Java¹⁾ specimen, in millimeters:

1) In v. d. Hoeven's paper is a mistake corrected, not correctly however, in the english translation. V. d. Hoeven writes in dutch, l. c. p. 52: »het voorwerp van *Sumatra* is 0.360 lang, waarvan de kop ongeveer 0.048 inneemt, de staart 0.175. Het grootere voorwerp van *Sumatra* is lichter ros gekleurd." This has been translated in A. M. N. H. 1859, p. 471 thus: »The specimen from *Java* is... The larger specimen from *Sumatra* is of a lighter red colour."

Head and body	209
Tail	186
Hind foot with claws	30
Ear	15
Length of skull	41
Greatest breadth	22
Length of upper molar series.	9
Distance between upper incisor and first molar .	11
Incisors smooth, upper incisors orange colored, lower ones yellow.	

Fur very long and very soft to touch; hairs of belly uniformly reddish white in the Sumatra-specimen, pure white in the Java-specimen: all the other hairs have their basal half dark mouse-color and their terminal half more or less reddish (*fauve* apud Cuvier): the tail is reddish, perhaps decolored; ears and feet reddish, nails horn-brown. For the rest I refer to Cuvier and v. d. Hoeven. From all what has been reported concerning it, we may now conclude, that *Pithechir melanurus* S. Müller lives in Sumatra and West-Java, that Duvaucel's drawing represents the animal in its natural size and has been satisfactorily accurate drawn, and finally that the animal is a true Mouse.

NB. There is in the »Bijdragen tot de Dierkunde van Natura Artis Magistra, Feestnummer, Amsterdam, 1888" a paper, written by Mr. K. N. Swierstra, one of the members of the scientific staff of that splendid institution, and entitled »Naamlijst van levende dieren, 1838—1888." On p. 15 of that paper the author states that in 1871 lived in the named Zoological Garden a specimen of *Pithicheirus melanurus* from East-Java, Padjarakan. I am informed by Mr. Swierstra that unhappily that animal has not been

The specimen from Java however is the largest and the lightest colored and has the white belly (see also v. d. Hoeven, p. 51 and A. M. N. H. p. 471), therefore the correction in A. M. N. H. should have been as follows: »The specimen from *Sumatra* is . . . The larger specimen is from *Java* and of a lighter red colour."

preserved in the Museum and that nobody knows anything about its fate. If the animal has not been confounded with another, then East-Java is a third locality for this most interesting species.

Dr. Kerbert, Director of *Natura Artis Magistra* at Amsterdam kindly informed me that the named Zool. Society received on October 22, 1870 a living mouse, presented by Mr. van Vloten from Padjarakan, a sugar-manufacture in the Probolinggo Residency, East Java and registered by Dr. Westerman as *Pithecheir melanurus?* and that the individual truly has been lost.

Tupaja dorsalis Schlegel.

There are in our Museum two small *Tupaja*-specimens, being the types of *Tupaja dorsalis* described and figured in 1857 by Professor Schlegel (*Handleiding tot de beoefening der Dierkunde*, deel 1, p. 59, plaat III, fig. 31) in these terms: »*Tupaja dorsalis* from Borneo has a slender tail and a black stripe on the back." In 1872 Professor Schlegel again described and figured it (*De Dierentuin van het Kon. Zool. Gen. Natura Artis Magistra, Mammalia*, pp. 61 and 62). This also very short description runs as follows: »In another species from Borneo, *Tupaja dorsalis*, the tail is more slender (than in *Tupaja tana*) and the back is lengthwise adorned with a black stripe."

Having extracted the skull from one of the typical specimens, I saw that it was not yet fullgrown and supposing that the difference in color between them and *T. tana* (in *tana* likewise the deep black stripe on the back is very well developed, although *only from between the ears to halfway the back*) would merely be due to age, I exhibited Schlegel's species as young specimens of the latter species in my Catalogues (Cat. Ost. 1887, p. 240 and Cat. Syst. 1888, p. 116). Shortly afterwards however a more accurate study convinced me that I was in error and I now will try to expose the grounds upon which

my belief in the validity of *Tupaja dorsalis* Schlegel is based.

I already remarked that the specimens are not yet full-grown, indeed in both rami the penultimate upper premolar of the milk-dentition still is present although pushed aloft by the permanent premolar, which is very good to see, meanwhile in the lower jaw the hindmost premolar has not yet attained its full development. For the rest the teeth and their relative position in the jaws do not materially differ from the same organs in *Tupaja tana*; the dimensions of the skull like those of the teeth are generally smaller than in that species; the difference in size however is important enough for specific distinction, as may be obvious from the following measurements in millimeters:

	<i>T. tana</i> . ¹⁾	<i>T. dorsalis</i> .
Length of skull	66	48
» » lower jaw	43	33
Across zygomatic arches	30	21
Length of bony palate	36	26
» » nasal bones		18

The skull of *T. dorsalis* has the slender elongate form as the same part of *T. tana*, and herein greatly differs from *T. ferruginea*, *javanica* and other *Tupaja*'s.

The fur is very soft: the moderately long fur of the upperparts of the body abruptly about half way the sides of the body turns in much shorter and adpressed fur of the underparts. The fur of the upperparts has a rufous brown tinge, browner and more or less grizzled towards the anterior half of the back and fore-legs: the basal part of each hair is of a dark mouse-color. *From a point between the ears runs a very good developed deep black stripe along the spine of the back to the base of the tail.* The shoulder-stripe is yellowish white. The hairs of the belly and chest are entirely reddish white or white along the middle; the sides of the belly have a more brownish red

1) Skull *c* of my Catalogue ostéologique.

tinge. The tail is very slender; its hairs are rather short, the longest measure about 15 millimeters.

	mm.
Length of head and body	185
» » tail with tuft.	165
» » hindfoot with claws.	40

Our two typical specimens agree exactly in size and color with each other.

They have been collected by Schwaner, one of the members of the old »Natuurkundige Commissie'', in North Western Borneo, in the neighborhood of the Kapoeas-river. My friend Oldfield Thomas kindly informed me that the British Museum has received from Mr. A. H. Everett one specimen from Baram, East Sarawak, and two from Mount Penrisen, West Sarawak.

NOTE XXXIX.

DESCRIPTIONS OF EARTHWORMS.

BY

Dr. R. HORST.

V.

On two new *Perichaeta*-species
from Billiton.
(Plate 10).

Among the animals, collected by Dr. A. Vorderman in the island of Billiton¹⁾ and presented to our Museum, I met with some earthworms belonging to the genus *Perichaeta*, which appear to be hitherto undescribed.

Perichaeta vordermanni, n. sp.

The largest of the two specimens measures 315 mm. in length; the number of its segments amounts to 175. The colour is a yellowish brown, somewhat darker in the anterior portion of the body; a region around the male generative pores and the ridge of setae around each segment are whitish coloured.

The peristomial segment and the prostomium could not be recognized, as the cuticula has loosened from the body-wall and the buccal cavity is partially everted. The anterior three segments have about the same length, but in the succeeding ones the longitudinal diameter is gradually

1) See p. 149 of this volume.

increasing, so that the segments in front of the clitellum are twice as long as those of the cephalic region. The segments of the caudal region are short, closely pressed together, with a prominent ridge of setae, giving to this portion of the body a somewhat serrated appearance.

The clitellum occupies the usual number of segments 14—16; but neither the intersegmental grooves, nor the setae are visible upon it. The dorsal pores appear to be absent in the anterior body-region; the first of them is situated in front of the clitellum, between the 13th and 14th ring.

There are four conspicuous pores of the spermathecae on each side of the body, between the segments 5 and 6, 6 and 7, 7 and 8, and 8 and 9.

A single oviducal pore is situated on the ventral side of the 14th segment. The male generative pores (fig. 1) upon the 18th ring are surrounded by a glandular area, which extends over segment 17 and 19 and bears several copulatory papillae. The 17th and 19th segment each have a pair of papillae situated just in the series of setae; behind each papilla upon segment 17 and in front of those of segment 19 there is a transversal sucker-shaped groove. The large papillae of segment 18, bearing the male pores, just correspond in position with these grooves; moreover this segment has another pair of small low papillae situated on each side of the ventral median line and in front of the circle of setae. At the ventral side of segment 7 and 8 there is a pair of inconspicuous papillae, situated behind the row of setae.

The setae are arranged in a continuous row; in the segments succeeding to the clitellum their number is about 80, increasing in those of the caudal region to 90. On the contrary in the anterior segments their number is gradually diminishing.

Concerning the internal anatomy could be stated, that the 5th, 6th and 7th septum are specially thickened and funnel-shaped, entirely hiding the oesophagus. The 7th septum does not exactly originate from the

intersegmental groove between segment 7 and 8, but about from the middle of the 7th segment. The 8th septum is absent and the 9th one, instead of being inserted at the boundary of segment 9 and 10, originates from the middle of the ninth segment. The septa 10, 11 and 12 are rather thick and muscular, on the contrary the 9th one is thin and membranaceous. The gizzard lies between the 7th and 9th septum and therefore appears to belong to the segments 8 and 9. The portion of the intestinal canal, occupying septum 11 and 12 has a thick glandular wall, provided with numerous lamellar folds; the sacculated intestine commences in segment 15. In the 26th segment the intestinal canal is provided with a pair of tubular coeca, directed forwards.

The nephridia are represented by a network of small tubules; in the anterior segments they occupy the total internal side of the body-wall; in the succeeding segments however they are confined to the vicinity of the mesenteries.

The main stems of the vascular system consist of a dorsal, a ventral, a supra-intestinal and an infra-intestinal vessel, moreover there are a pair of strong lateral vessels along the ventral side of the gizzard; the dorsal and ventral vessel communicate by four pairs of commissural vessels in segment 6, 7, 8 and 9. In the succeeding segments 10—13 large abdominal hearts are situated, which arise from the supra-intestinal vessel.

The four pairs of spermathecae occupy segment 6, 7, 8 and 9; as the 8th septum is absent, the two last pairs of them are not separated by any mesentery. Each spermatheca (fig. 2) consists of a long tubular pouch, provided with several transversal, parallel grooves and of a small stalked diverticulum, which reaches to the half of its length; in neither of them the presence of spermatozoa could be stated.

The sperm-sacs are situated in segment 10, 11 and 12 and enclose the funnels of the vasa deferentia, which terminate in segment 18 with a horseshoe-shaped muscular duct; the prostate (fig. 3) attached to it is a large lobated organ,

extending over nearly six segments. In segment 17, 18 and 19 on each side of the ventral nerve-cord a longitudinal glandular thickening is visible, corresponding with the external papillae.

Though we know several *Perichaeta*-species, which possess four pairs of spermathecae, our specimens could not be identified with one of them; therefore this new species may be called after Mr. Vorderman, who collected them. *P. vordermanni* is without doubt closely allied to *P. feae* Rosa ¹⁾, — *modiglianii* Rosa ²⁾, — *vaillanti* Beddard ³⁾, — *indica* Horst ⁴⁾, and — *posthuma* Vaill. (— *affinis* Perrier), especially to the two last named species. However in *P. posthuma*, according to the description and figures of Vaillant ⁵⁾, Perrier ⁶⁾ and Beddard ⁷⁾, the spermatheca is a pear-shaped pouch with a small, short diverticulum and there is only a pair of papillae upon segment 17 and 19. *P. indica* has a much smaller number of setae in a row (42 to 48), and possesses no papillae at all, as likely is the case in *P. vaillanti* and *P. feae*. *P. modiglianii* from Nias differs, according to Rosa's description, by having only two small papillae on the internal side of each papilla bearing the male pore.

Perichaeta sluiteri, n. sp.

We possess four specimens of this *Perichaeta*; the length of the largest of them is 190 mm., the number of its segments amounting to 135. The colour is yellowish brown,

1) Perichetidi di Birmania; Ann. del Museo Civ. di St. Nat. di Genova, Ser. 2, Vol. VI (1888), p. 161.

2) Lombrichi raccolti nell' isola Nias; the same Journal Ser. 2, Vol. VII (1889), p. 1.

3) Worms of the genus *Perichaeta*; Proceed. Zool. Soc. London, 1890, p. 52.

4) Midden-Sumatra, Dl. IV, Natuurl. Historie, 12e Afd. Vermes. p. 3. — Notes from the Leyden Museum, Vol. V (1883), p. 182.

5) Ann. Sc. Nat. Zoologie, 5e Sér. T. 10 (1868), p. 228.

6) Nouv. Arch. du Muséum, T. VII, p. 106.

7) Ann. and Mag. Nat.-Hist. 1886, p. 93.

darker on the clitellum; the ridge of setae on each segment is whitish. The longitudinal diameter of the segments gradually increases from the head to the clitellum, so that the segments 10, 11 and 12 are about twice as long as the anterior segments. The male pores occupy the usual position upon a large transverse papilla, situated just in the row of setae. Each pore lies in the external half of this papilla upon a small area, surrounded by a circular groove; its internal half is occupied by a glandular mass. There are two pairs of pores of the spermathecae in the intersegmental groove of segment 7 and 8, 8 and 9, surrounded by a small glandular area. The dorsal pores commence between the 11th and 12th segment. No copulatory papillae are visible.

The setae form a continuous row, only with a small gap in the ventral median line; their number upon the segments in the vicinity of the clitellum is about 60, in the caudal region however it increases to 75. Upon the ventral side the setae are more closely placed than upon the dorsum and about twice as long. There are no setae upon the clitellum and the papillae of the 18th segment.

The 5th, 6th and 7th septum are specially thickened; the 8th one is absent, the 9th is membranaceous. This 9th septum, instead of originating from the intersegmental groove of segment 9 and 10, is inserted upon the middle of the 9th segment, and pushed backwards by the gizzard. That really the 8th septum is wanting may be concluded from the fact, that the two pairs of spermathecae are situated between the 7th septum and the next one.

Each spermatheca is a pear-shaped pouch (fig. 4) with a short excretory duct; next to it lies a tubular diverticulum, bent upon itself like a »Pan's pipe" and dilated at its end in a small vesicle, which is filled with spermatozoa. The sperm-sacs occupy the segments 10, 11 and 12; they are not connected by a median sac, and the two last pairs are specially large. The terminal portion of the vasa deferentia is a S-like bent muscular duct of the usual shape.

The prostata (fig. 5) is a lobated organ, about as long as broad; it is divided by a deep notch in two halves, which show four or five secondary lobes.

The gizzard belongs to segment 8 and 9; in the 11th and 12th segment the wall of the intestine shows a glandular thickening. The sacculated intestine commences in segment 15; intestinal coeca are present in the 26th segment.

The vascular system possesses the usual structure; intestinal hearts are situated in segment 10, 11, 12 and 13.

The nephridia form a tuft of small tubules, specially visible in the anterior segments.

Going over the known *Perichaeta*-species, with two pairs of spermathecae, specially those from the Malayan Region, the specimens from Billiton could not be identified with one of them. This new species may be named in honour of Dr. C. Ph. Sluiter, the well-known naturalist of Batavia.

In regard to the structure of the spermathecae *P. sluiteri* shows much resemblance to *P. quadragenaria* Perrier ¹⁾; however according to Perrier's description this species has only one pair of spermathecae and no more than 40 setae in each row. *P. sumatrana* Horst ²⁾ also differs by its smaller number of setae (38); in his turn *P. hasseltii* Horst ³⁾ is distinguished by the closely placed ventral setae, as well as by the shape of the spermathecae. In *P. musica* Horst (fig. 6) and *P. annulata* Horst (fig. 7) the spermathecae have also a totally different structure; moreover the first named species has a much greater number of setae in each row (100).

Leyden Museum, October 1890.

1) loc. cit. p. 122.

2) loc. cit. p. 5, fig. 2.

3) loc. cit. p. 5, fig. 3.

EXPLANATION

OF

Plate 10.

- Fig. 1. *Perichaeta vordermanni* Horst; ventral view of segment 17—19, to show the papillae and grooves in the vicinity of the male pores. $\times 3$ diam.
- Fig. 2. Spermatheca of the same species. $\times 8$ diam.
- Fig. 3. Prostata and ventral glandular thickenings of the same species. $\times 3$ diam.
- Fig. 4. *Perichaeta sluiteri* Horst; spermatheca. $\times 8$ diam.
- Fig. 5. Prostata of the same species. $\times 9$ diam.
- Fig. 6. *Perichaeta musica* Horst; spermatheca. $\times 4$ diam.
- Fig. 7. *Perichaeta annulata* Horst; spermatheca magnified.
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NOTE XL.

DESCRIPTION DE DEUX ESPÈCES NOUVELLES DU
GENRE POTERIOPHORUS, SCHH. DE LA
FAMILLE DES CURCULIONIDES.

PAR

W. ROELOFS.

Poteriophorus Van de Polli, n. sp. ♀.

D'une forme assez large; blanc en dessus, brun-jaunâtre en dessous. Prosternum avec une protubérance en forme de corne recourbée. — Longueur (sans le rostre) 28 mm.; largeur aux épaules 13 mm.

Plus large en proportion de la longueur que *P. niveus*; les téguments noirs couverts d'un enduit blanc sur la tête, le prothorax et les élytres, plus jaunâtre sur les antennes, les pattes et le pygidium; dessous d'un brun-jaunâtre variant du brun foncé au brun clair.

Rostre plus long que la tête et le prothorax pris ensemble, robuste, régulièrement courbé, aminci près de l'extrémité où se trouve une nouvelle courbe un peu anguleuse; les côtés sont pourvus d'une rainure graduellement plus profonde vers le bout et grossièrement ponctuée devant les yeux. Le dessus du rostre est finement ponctué, avec une ligne peu marquée à la base et une dépression au dessus de la bouche; le dessous porte une double rangée de gros poils brun-jaunâtres, serrés. — Dernier article des antennes et bouche noirs.

Prothorax assez large, rétréci près de son bord antérieur, obsolètement ponctué par dessus, plus fortement sur les côtés et le prosternum. Le dernier présente au milieu de sa partie antérieure un espace garni de poils bruns. Il est armé entre les pattes antérieures d'une protubérance en

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forme de forte corne recourbée vers l'avant et dénudée à la pointe. — Ecusson déprimé, jaunâtre.

Elytres isolément arrondies au bout, un peu transversalement déprimées à la base et vers le milieu, striées et obsolètement ponctuées; leur base présente de petites échancrures à la naissance des 3^{es}, 4^{es}, et 5^{es} stries.

Dessous du métasternum avec une ponctuation très serrée, ses côtés et ceux du mésosternum avec une ponctuation en forme d'ocelles confluentes.

Abdomen couvert d'une ponctuation qui devient plus serrée sur le dernier segment et le pygidium. Sur les jambes se voient quelques rangées de cils courts et serrés, leur tranche intérieure porte deux rangs de poils plus longs. Cuisses ponctuées, portant des poils courts sur leur tranche inférieure.

Un individu femelle dans la collection de Mr. Neervoort van de Poll et capturé par Mr. A. H. Morees à Padang Oelak Tanding, résidence de Palembang, île de Sumatra.

L'espèce offre des analogies avec *P. niveus*, mais paraît plus voisine de *P. (Hyposarothra) imperatrix* White, dont l'auteur n'a connu également qu'un individu femelle. Cette espèce est originaire des Philippines. Je ne la connais pas en nature, mais d'après la description (Ann. & Mag. of Nat. Hist., Ser. 2, Vol. I, pag. 107 et suivants) et la figure, les deux espèces se distinguent surtout par la forme de la protubérance du prosternum. Leur couleur est différente. Chez la nouvelle espèce le prothorax paraît plus parallèle sur les côtés et les élytres plus rétrécies au bout, comparés à la figure de *P. imperatrix*, que l'auteur donne comme très exacte.

Poteriophorus sellatus, n. sp. ♂.

D'une forme étroite parallèle; brun-olivâtre, orné d'une bande blanche sur les côtés et une tache de la même couleur sur les élytres. — Longueur (sans le rostre) 21 mm.; largeur aux épaules 8 mm.

Allongé et plus parallèle sur les côtés que *P. niveus*,

etc.; d'un brun-olivâtre plus clair en dessous, sur les antennes et les pattes; une large bande d'un blanc-argenté couvre les côtés du prothorax et continue jusqu'aux premiers segments de l'abdomen sur lesquels elle s'étend, pour s'effacer en arrière; une grande tache blanche allongée va de la base jusqu'au tiers postérieur des élytres et couvre la suture jusque vers le 4^e intervalle des stries; le vertex et une ligne médiane du prothorax sont d'un blanc-grisâtre.

Rostre beaucoup moins long que le prothorax, fortement courbé surtout à la base, très gros à la base, graduellement plus étroit vers l'extrémité, muni devant la tête d'une gibbosité séparée par une ligne au milieu. Le rostre porte plusieurs carènes étroites, dont les intervalles sont couvertes d'une pubescence brune. — Antennes assez longues, de la couleur du corps, la base du dernier article noire.

Prothorax allongé, peu rétréci en avant, ses côtés parallèles, sa base presque droite. La ponctuation du prothorax consiste en petits points ocellaires irréguliers, peu serrés, d'une couleur plus claire que le fond. La bande blanche latérale porte des points plus profonds. — Ecusson blanchâtre.

Elytres très peu élargies aux épaules, presque droites sur les côtés, se rétrécissant faiblement en arrière, tronquées au bout, striées, et couvertes de petites taches rondes d'une couleur plus pâle que le fond.

Dessous vaguement ponctué de points ocellaires. La bande blanche sur les côtés du metasternum porte des points profonds irréguliers.

Le pygidium en triangle curviligne, fortement déclive, est garni d'une grosse ponctuation; une ligne au milieu et les bords sont un peu élevés. Cuisses avec de très petits cils épars. Jambes ayant des côtes garnis de très petits cils, leur tranche intérieure est garnie de poils plus longs.

Un individu mâle dans la collection de Mr. Neervoort van de Poll, capturé à Perak (Malacca) par Mr. Künstler.

La Haye, 15 Septembre 1890.

NOTE XLI.

ON RHINOCEROS SIMUS, BURCHELL IN THE
LEYDEN MUSEUM.

BY

Dr. F. A. JENTINK.

October 1890.

According to Dr. P. L. Selater (Nature, September 25, 1890, p. 520) Mr. F. Selous says in the *Field* of August 16 as follows: — »it was within a mile of this spot that, two years previously (i. e. in 1883), I shot two white Rhinoceroses (*Rhinoceros simus*), the last of their kind that have been killed (and, perhaps, that *ever will be killed*) by an Englishman. They were male and female, and I preserved the skin of the head and the skull of the former for the South African Museum in Cape town, where they now are. . . . To the best of my belief, the great white or square-mouthed Rhinoceros, the largest of modern terrestrial mammals after the Elephant, is on the very verge of extinction, and in the next year or two will become absolutely extinct. If in the near future some student of natural history should wish to know what this extinct beast really was like, he will find nothing in all the Museums of Europe and America to enlighten him upon the subject, but some half-dozen skulls and a goodly number of the anterior horns.”

After having pointed out the four striking characteristics by which the heads of *Rh. simus* and *Rh. bicornis* may be distinguished, Dr. Selater concludes as follows: » I wish to call special

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attention to what Mr. Selous has already said — that no Museum in Europe or America possesses a specimen of this huge animal and to point out that the country, in which alone (as is possible but by no means certain) the last stragglers exist, being now within the British Empire, it is clearly our duty to endeavour to obtain and preserve examples of the great white or square-mouthed Rhinoceros for the use and information of posterity."

In P. Z. S. L. 1886, p. 144, Dr. Sclater wrote: »Indeed, as is well known, such specimens of the latter species (*Rh. simus*), with the exception of a single immature example in the British Museum, are almost unknown in Europe."

Mr. F. C. Selous published in 1890 a book entitled »A Hunter's wanderings in Africa" and in that book I find on p. 447 in a list of game, shot between the 1st of January 1877 and the 31st December 1880, that Selous has killed *two* white Rhinoceroses; therefore the named *two* animals are the *two* specimens mentioned in the *Field*, and consequently the year 1883 (see Nature l.c.) is not correct. Although Selous only has shot two white Rhinoceroses he however often has seen living specimens, so (A Hunter's wanderings, p. 60): »looking up I saw a white Rhinoceros cow"; l. c. p. 185: »on my return journey I saw a *good many* Rhinoceroses of both the black and white species"; l. c. p. 359: »on our way to the Hanyane we one day came upon *five* white Rhinoceroses"! and on p. 191: »*Rhinoceros simus* is still to be found between the Okavango and Cunene-rivers.... In 1878 and 1880 I still found the square-mouthed (or white) Rhinoceroses *fairly numerous* in a small tract of country in North-eastern Mashuna Land, between the Umniati and Hanyane rivers.... Their extermination in this portion of the country may therefore, I am afraid, be expected within a very few years, and the square-mouthed Rhinoceros will then only exist in a few tracts of S. E. Africa, in the neighbourhood of the river Sabi!"

I do not know the reason why Mr. Selous supposes in the *Field* that *at present* all those white Rhinoceroses will be extinct, but if he is right in this point, I think, that Mr. Selous, Dr. Selater and every other friend of Nature, as well as the whole scientific world will hear with great excitement my assertion *that there are since more than 40 years in our Museum a beautifully stuffed adult female and since the year 1879 a flat skin of an adult specimen of Rhinoceros simus!* These huge animals have a short (not a prehensile) upper lip; an elongated ear-conch and the two margins of the ear-conch (in the flat skin the ears are in a very bad state) are united together for a great extent and form a closed cylinder which rises about 7 cm. (2 inches 8 lines) above the base; the nostrils are elongated in a direction parallel with the mouth; the eye is placed further back in the head than in *Rhinoceros bicornis*; the anterior horn (the flat skin is without horns) is not perfectly round; and the distance between anterior horn and margin of upperlip is very great. In conclusion, we possess a fine and complete stuffed specimen of the true *Rhinoceros simus*, and as there are perhaps (see Mr. Selous and Dr. Selater) no other adult specimens in America nor Europe, I will give some measurements of this stuffed female in our Museum:

Centimeters.

Length of head and body, from margin of upper lip to base of tail	about 353
Length of head, from margin of upper lip to between the ears	about 91
Length of tail without bristles	79
» » upperlip	28
» » ears	24
Distance between eye and ear	32.5
Height of anterior horn	47
» » posterior »	18
Circumference at base of anterior horn . .	51
» » » » posterior » . .	42

Height at shoulders.	148
» » crupper	146.5
Circumference of the body	318

As to the name *white* Rhinoceros for our species, Mr. Selous, l. c. p. 192, remarks: »the white and black species both are of a sort of dark slate-colour; and so far from one being white and the other black, I should be sorry to state upon oath which was the darker of the two." Smith (Illustrations of the Zoology of South Africa) called the colour of *Rh. simus* pale broccoli-brown, of *Rh. bicornis* pale yellowish brown and of *Rh. keitloa* (perhaps = *bicornis*) pale brownish yellow.

Sir Samuel Baker (Wild Beasts and their Ways, 1890, Vol. II, p. 88) says that the great *Rhinoceros* (*Rh. simus*) is distinguished by its pale colour. A very acceptable suggestion has been made by Mr. W. Drummond (P. Z. S. L. 1876, p. 110): »the distinction of the black and white seems to me misleading and misapplied, all Rhinoceroses being of the same colour, namely a peculiar shade of brown or if any difference does exist, it being in *Rh. bicornis minor* possessing a tinge of red..... all such cases may be referred to outward circumstances, such as the position of the sun, or the kind of mud they may have been rolling in last, and partly, no doubt to the age and sex of the animal. I may mention that I have watched a bull of *Rh. simus* trotting past me in the full glare of the midday sun, and it has appeared to me almost white; while after following the same animal up and finding it feeding with the long shadows of evening on it, its colour has then seemed to be, as it really is, a deep brown."

The adult female in the Leyden Museum is labeled »de la partie intérieure de la Colonie du Cap." The flat skin is without locality and has been presented to our Museum in the year 1879 by his Excellency the Minister for the home department.

NB. There is another very interesting animal which

formerly lived in South Africa in considerable abundance and now seems to be extinct. I mean the *Quagga*. We find in H. A. Bryden's *Kloof and Karroo in Cape Colony*, 1889, an article »on the extinction of the true Quagga (*Equus quagga*)". Bryden says that he fears that there is now no longer any reasonable doubt that the true Quagga — Quacha of the Hottentots — *Equus quagga* of Linnaeus — must be numbered in the increasing catalogue of extinct creatures! and he exclaims: »no human effort can now recall this magnificent form — it is gone for ever, after an existence of untold thousands of years upon its spacious plains!"

If the Quagga nearly or really is extinct, then I believe it more than time to look round in the *Musea* of Natural History and to register what has been preserved for future time: and I fear that our harvest will be rather poor! In the British Museum there is a stuffed animal, *in very bad state* (Handlist, a. s. o. 1873, p. 37). In *Natura Artis Magistra* at Amsterdam there too is a single stuffed specimen. In the Leyden Museum is a beautifully stuffed adult male, died in 1826 in confinement and received from the frontiers of the Cape-colony, and its skeleton. Dr. Möbius of Berlin writes me that in the Museum under his charge there are a stuffed female-specimen with its skull and backbones, a skeleton and a skull. I have no account about the other *Musea* of Natural History.

NOTE XLII.

DESCRIPTION D'UNE ESPÈCE NOUVELLE
D'ÉLATÉRIDE.

PAR

E. CANDÈZE.

Melanoxanthus nigrosignatus, sp. n.

Niger, *opacus*, *pubescens*; *antennis brevibus*, *nigris*; *prothorace tumido*, *discrete punctato*, *latitudine paulo longiore*, *rufo*, *nitido*, *guttis duabus confluentibus*, *apicalibus*, *nigris*; *elytris depressis*, *granulatis*, *punctato-substriatis*. *Subtus niger prothorace excepto*. — Long. 10 mill., lat. $2\frac{1}{4}$ mill.

Java occid. — Un seul exemplaire, présenté au Musée de Leyde par Mr. M. C. Piepers.

A placer parmi les premières espèces du genre: *melanocephalus*, *dimidiatipennis*, *zebra*, *ruptus*, etc.

Glain-lez-Liège, Octobre 1890.

NOTE XLIII.

THREE NEW MALAYAN LONGICORN COLEOPTERA.

DESCRIBED BY

C. RITSEMA Cz.*Coloborhombus auricomus*, sp. n. ♀.

Length about 33 mm. — The whole insect, with the exception, however, of the 2nd and succeeding abdominal segments, shows, under certain lights, a beautiful golden lustre, owing to a fine golden pubescence which is longer and more erect on the prothorax; on the first ventral segment this pubescence is, in places, silvery, on the 2nd and following segments it is black.

The head with palpi and antennae, the legs, the wing-cases and the wings are ochreous; the head with an impressed, mesial, dark line, which extends from the centre of the face up to the prothorax; the throat, a spot behind each eye, and the tip of the mandibles black, the antennae slightly infusate towards the end.

The prothorax blackish, with ill-defined brown spots along the flanks which have a slight protuberance about the middle; the disk with four slight rounded elevations. The meso- and metasternum black, brownish in the middle, and with faint blue tinges. The scutellum dark coloured and of an elongate triangular shape.

The elytra reach somewhat beyond the posterior coxae, their outer margin straight, their inner one strongly sinuate which makes them widely gaping towards the apices which are sharply pointed.

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The abdomen dark steel blue, the apical margin of the pygidium and of the last ventral segment ochreous and faintly notched in the middle.

The described female specimen originates from the Kediri Residency (S. E. Java), and has been presented to the Leyden Museum by Dr. H. J. Veth.

Since the publication of the 9th volume of the Munich Catalogue (1872) two other new species of this genus have been described, viz.

Coloborhombus fulvus H. W. Bates, Cist. Ent. II. p. 395, from Sylhet (probably the *C. velutinus* Saund. in litt.), and

» *fasciatipennis* C. O. Waterh., Trans. Ent. Soc. Lond. 1885. p. 369; pl. 10, fig. 12, from Borneo.

Thermonotus Pasteuri, sp. n. ♂ and ♀.

In the Annals and Magazine of Natural History for November 1888 (p. 399) Mr. C. J. Gahan of the British Museum has based the genus *Thermonotus* [closely allied to *Cereopsius* Pascoe¹⁾] upon a Lamiid from N. India and Penang, which is called by him *Thermonotus nigripes*.

No doubt *Cereopsius apicalis* from East Java, described by myself on p. 5 of the 3rd volume (1881) of the Notes from the Leyden Museum, will prove to be congeneric with Gahan's insect, and now I am fortunate enough to give the description of a third species which originates from the island of Nias, west of Sumatra. I dedicate this new species to Mr. J. D. Pasteur, who lately enriched the Entomological Collection of the Leyden Museum with a beautiful series of Nias Coleoptera and Lepidoptera.

1) The genus *Cereopsius* is often ascribed to Thomson, an error which, I think, originates from Thomson's Syst. Ceramb. p. 84. If we look, however, at p. 132 of the same work, we see under Corrigenda: „CEREOPSISUS p. 84, n° 289. *Au lieu de*: Thomson, etc. . . . *Lisez*: Pascoe: Journ. Ent. I. (1862). p. 344.”

Thermonotus Pasteuri is extremely close to and shows a striking resemblance with *Th. apicalis* Rits., but is easily distinguished from that species by the more robust prothorax which has the lateral spines much less slender, by the black colour of the abdomen, metasternum and coxae, etc.

Length 22—23 mm., breadth at the shoulders of the elytra $8\frac{1}{2}$ —9 mm. — Brick red, the apical half of the mandibles, the eyes and antennae, a spot along the middle of the scutellum, the entire legs, the metasternum and the abdomen black, the upper lip and the apical joint of the palpi blackish, the apical third of the elytra dark steel blue. The prothorax and the red portion of the elytra are (in places, as my couple is somewhat rubbed) covered with a very dense, almost crustlike, ochreous pubescence; a reniform spot of a similar pubescence is present on the head (which *inter alia* for the rest is almost smooth) behind the upper lobes of the eyes; on the steel blue apical portion of the elytra and on the dark spot of the scutellum the pubescence is black; a small spot of a white pubescence is present on the under surface of the base of the 3rd and following antennal joints. The sides of the abdomen, the metasternum and the legs are thinly covered with a delicate greyish pile.

The head is nearly smooth and impunctate, but provided along the middle with a narrow raised dark line which extends from the anterior margin of the clypeus up to the prothorax; a slight impression is to be seen along the middle of the vertex, and another impression, which is sharply bounded on the inside, is situated between the base of the eyes and mandibles.

The prothorax is robust and transverse, and measures from point to point of the lateral spines $8\frac{1}{2}$ —9 mm.; the anterior transverse groove is angularly curved backwards in the middle; the disk between the lateral spines is raised, has an uneven, coarsely punctured surface, and a mesial smooth streak which is notched at the base opposite the scutellum; the lateral spines are very broad at their base,

much less slender than in *apicalis*, and distinctly curved backwards. The scutellum is broadly rounded at the apex, and black along the middle.

The elytra are slightly narrowing towards the apex which is rounded; between the scutellum and the shoulders the base projects forwards so as to form a hump on each side of the scutellum; the elytra are strongly though not densely punctured, and the punctures become smaller towards the suture and the apex; each elytron shows moreover two almost inconspicuous longitudinal costae, one from the middle of the basal hump, the other from between the hump and the shoulder, both disappearing in the steel blue region.

Under surface and legs impunctate, with the exception of the apical ventral segment which shows a few minute punctures. Whereas in *Pasteuri* the prosternal process is rounded in front and behind, it is in *apicalis* bounded in front by a raised transverse ridge. The mesosternal process is alike in both species.

In the male the antennae are slightly more slender and elongate than in the female, and both the pygidium and apical ventral segment are truncated in nearly straight lines with rounded angles. In the female, however, (and this is likewise the case in the type-specimen of *apicalis*) the pygidium and the apical ventral segment are narrowly notched at the end.

I found the described couple of this species in the Nias-collection, presented to the Leyden Museum by Mr. J. D. Pasteur.

Atossa bipartita, sp. n. ♀.

Length 13—15 mm. — Resembling *A. atomaria* Pasc.¹⁾ from Penang, but easily distinguished from that species by the transverse white line across the middle of the elytra

1) Proc. Zool. Soc. London. 1866. p. 254; pl. 26, fig. 6.

and by the longitudinal white lines behind the transverse one.

Dark brown, the palpi, antennae and legs reddish brown; covered with a delicate greyish pile and variegated above with white lines and dots. The two basal joints of the antennae entirely, the following joints only on the basal half, covered with a fine grey pubescence; the legs are covered with a similar pubescence which is intermixed with a few erect pale coloured hairs; the antennae are thinly fringed underneath with long pale coloured hairs which disappear, however, towards the tip.

The lower half of the head (the epistomum, labrum and base of mandibles inclusive) covered with a dense pale yellowish pubescence which is interrupted by several bare lines, namely a transverse one separating the face from the epistomum, an oblique one across the cheeks, three vertical straight³ ones (one along the middle of the face and, on each side of it, another uniting the inner margin of the eyes with that of the corresponding mandible), and finally a J-shaped one between the mesial- and lateral lines. The vertex of the head with two diverging white lines and another behind the eyes, all corresponding with four similar lines on the pronotum of which the outer ones, however, are more or less obliterated.

The pronotum is irregularly wrinkled, and with an irregular smooth space in the middle; the wrinkles are intermixed with a few glossy granules, especially on the flanks. The scutellum is impunctate, transverse, broadly rounded posteriorly.

The elytra distantly covered with large and deep punctures, whereas a few glossy granules are present at the base; they are divided, just before the middle, by a slightly angular transverse line of a white pubescence; their basal half is sparingly speckled with white, their apical half surrounded by a narrow line of a white pubescence and provided along the disk with three irregular similar lines and a few white dots between them.

The sterna are glossy and impunctate and show along

the sides spots of a dense pale yellowish pubescence; the abdomen likewise is glossy and impunctate, the 2nd, 3rd and 4th segment have a small lateral spot of white hairs at their base, whereas the 5th or apical segment, which *inter alia* is nearly as long as the three preceding segments taken together and shows an impressed line along the middle, is rather broadly margined laterally with a dense pale yellowish pubescence and fringed at the apical margin with long yellowish hairs; the apical margin of the pygidium is deeply notched in the middle.

Hab. Borneo (Diard). — Three female specimens in the Leyden Museum.

There is moreover in the Museum collection a male specimen, likewise ticketed »Diard, Borneo'', which differs from the above described female specimens, besides by the sexual differences ¹⁾ and its somewhat larger size and more robust shape, in having the prothorax distinctly longer, more strongly rounded at the sides, and without longitudinal white lines on the disk. I dare, however, not decide whether it is a variety of the male sex of my new species, or the male of an allied species, the more so because its elytra are somewhat rubbed.

The genus *Atossa* Thoms., which contains up to now three species, viz. *strenua* Thoms. from Java (the type of the genus), *atomaria* Pasc. from Penang, and *bipartita* Rits. from Borneo, is perhaps best differentiated from the allied genus *Grammoechus* Thoms., by its more approximate antennary tubers which are separated by a somewhat deeper excavation. The differences in the mandibles, mentioned by Lacordaire (Genera des Coléoptères. IX, 2. p. 497), »slender'' or »thick'', are merely sexual.

Leyden Museum, October 1890.

1) Longer antennae and forelegs, larger hook at the apex of the antennae, thicker mandibles, different size and conformation of the last abdominal segment, etc.

NOTE XLIV.

ON A COLLECTION OF REPTILES FROM NIAS, AND
ON CALAMARIA VIRGULATA, BOIE.

BY

Dr. Th. W. van LIDTH de JEUDE.

Some months ago a collection of Reptiles from Nias was presented to our Museum by Mr. J. D. Pasteur. The collection, though not a very large one, is of much importance to our Museum as up to this date no Reptiles from Nias were found in our collections. The Erpetology of the isle of Nias has already formed the subject of three papers, viz.: 1° a paper by the late Dr. J. G. Fischer ¹⁾, 2° a list published by Mr. G. A. Boulenger ²⁾ and 3° Mr. E. Modigliani's paper on the Fauna erpetologica of the isle of Nias ³⁾. To the enumeration and the description of the Reptiles collected by Mr. Modigliani himself he adds a list of all the Reptiles of the isle of Nias mentioned by Fischer and Boulenger as well as by himself. This list contains 43 species and though our collection consists of only 15 species, three of them are new to the Fauna of Nias. It is therefore that I give a full list of the spe-

1) Dr. J. G. Fischer, Ueber eine Collection Reptilien und Amphibien von der Insel Nias, Abh. d. Naturw. Ver. in Hamburg. Bd. IX.

2) G. A. Boulenger, A list of Reptiles and Batrachians from the Island of Nias, Ann. a. Mag. of Nat. History, 1885.

3) E. Modigliani, Materiali per la Fauna erpetologica dell' isola Nias, Ann. Mus. Civ. Stor. Nat. Genova, ser. 2, Vol. 7.

cies in Mr. Pasteur's collection, in which the species not yet recorded from Nias are preceded by an asterisk.

1. *Gecko stentor* Cant.
2. *Gonycephalus grandis* Gray.
3. *Calotes cristatellus* Kuhl.
4. *Mabuia multifasciata* Kuhl.
- *5. *Calamaria lumbricoidea* Schl.

The single specimen in the Nias-collection (still a young one, attaining to a length of about 25 c. m.) differs from the other specimens in the Leyden Museum in having the dark coloration on the belly very much developed, the dark spots on the abdominal shields being rather large, flowing together and so forming an irregular dark longitudinal band on the middle of the belly.

Schlegel, in his »Physionomie des Serpents'', makes mention of a young specimen of *Calamaria lumbricoidea* described by Boie under the name of *Calamaria virgulata*. This specimen, still present in the collections of the Leyden Museum, is not a young *Calamaria lumbricoidea* Schl., but belongs to a distinct species. It has a length of about 30 c. m. (is therefore larger than our young *C. lumbricoidea* from Nias) and differs from Schlegel's species not only in coloration, but in the pholidosis of the head also.

The first pair of lower labials are in contact with each other behind the mental-shield, which shield does not reach the anterior chin-shields. In this point the species agrees with *C. modesta*, *C. bicolor*, *C. nigro-albus* a. o., and differs from *C. lumbricoidea* and *C. gervaisi*. It is distinguished by the absence of an azygos shield between the chin-shields, by the presence of an anterior ocularshield, and by having an undivided analshield. As to the coloration of the specimen in spirits, the upper parts are of a brownish colour; there is, however, a whitish ring behind the head and another near the vent. The scales of the two outer series on each side of the body are provided with a round whitish spot in their centre. Moreover there are 5 dark longitudinal lines on the back, one on the middle of the

back and 2 on each flank. These lines are formed by small elongate dark spots on the scales, such a spot flowing together with that on the preceding and the following scale. These lines are situated on the 3rd, the 5th, the 7th, the 9th and the 11th longitudinal series of scales. The abdominal-shields are whitish, with several very small irregular dark spots anastomosing with each other, and so forming a dark cross-band at the anterior part of each abdominal-shield. This band is broadest in the middle of the shield. Underneath the tail the colour is whitish with a dark subcaudal line. The coloration of this species shows some resemblance with *C. gervaisi* D. & B. differing from it in presenting 5 in stead of 4 longitudinal dark lines.

Our specimen, captured in the isle of Java, has 190 abdominal- and 22 pairs of subcaudal-shields.

*6. *Cyclophis tricolor* Schl.

This interesting snake is represented in Mr. Pasteur's collection by a single specimen. Hitherto it is, as far as I know of, recorded from Java by Schlegel (and afterwards by Günther and Jan, though probably after specimens from the Leyden Museum), and from Sumatra by Stoliczka ¹). In the collections of the Leyden Museum there is one specimen from Sumatra, and another from Borneo.

7. *Simotes purpurascens* Schl.

The single specimen by which this snake is represented in Mr. Pasteur's collection agrees in all points with the description given by Fischer of *Simotes affinis* ²). It has 8 upper- and 9 lower-labials on each side, and differs in this point from the specimen mentioned in Boulenger's list under the name of *S. labuanensis* Gthr. which is said to have 7 upper- and 8 lower-labials ³).

1) F. Stoliczka, Malayan Reptilia and Amphibia. Journ. of the Asiatic Soc. of Bengal. 1873. p. 122.

2) Fischer, l. c. p. 4.

3) Günther, Reptiles of British India. p. 217.

Boulenger, l. c. p. 388.

Modigliani, l. c. p. 119.

O. Boettger, Herpetologische Notizen. Ber. Senck. Naturf. Ges. Frankfurt a/M. 1887. p. 43.

A specimen from Sumatra in the collections of the Leyden Museum quite agrees with our Nias specimen as to length, coloration and pholidosis of the head, except in the number of lower labials, which in the Sumatra-specimen is 8 instead of 9. So do 2 adult specimens from Java, collected by Boie & Macklot, having 9 lower labials, and classed in our collection under the name of *Xenodon purpurascens* Schl. In the same bottle with these 2 specimens is a young one (22 c. m.) which agrees with them as to the pholidosis but widely differs in coloration, the latter quite agreeing with Schlegel's figure of *Xenodon purpurascens* ¹⁾. There still exists in the collections of the Leyden Museum another young specimen, labelled *X. purpurascens* and captured in Sumatra, with 8 upper- and 9 lower-labials, which, as regards coloration, shows some resemblance with *S. affinis* Fischer or *S. trinitatus* D. & B. In my opinion all these specimens belong to *Simotes purpurascens* Schl., a species very much subject to variation in coloration as already mentioned by Schlegel himself.

8. *Simotes octolineatus* Schneid.

9. *Zapyrus fuscus* Gthr.

10. *Dendrophis picta* Gm.

11. » *caudolineata* Gray.

12. *Megaerophis flaviceps* Reinh.

Two small specimens (about 35 c. m.) in Mr. Pasteur's collection, and one somewhat larger specimen (about 50 c. m.) captured in 1862 in Sumatra, are the only specimens of this rare species ever sent to the Leyden Museum.

13. *Callophis intestinalis* Laur.

*14. *Platurus fischeri* Jan.

The occurrence of 2 adult specimens in our collection from Nias, classes this species in the fauna of that island.

15. *Ichthyophis glutinosus* L.

Leyden Museum, October 1890.

1) Schlegel, Abb. neuer oder unvolst. bek. Amphibien. Tafel 14.

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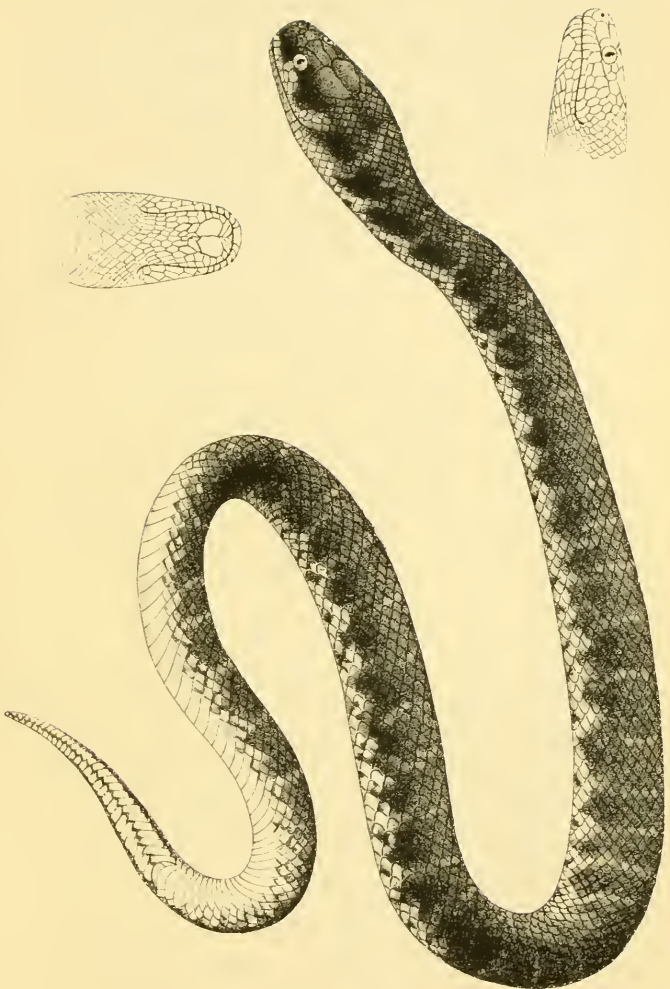
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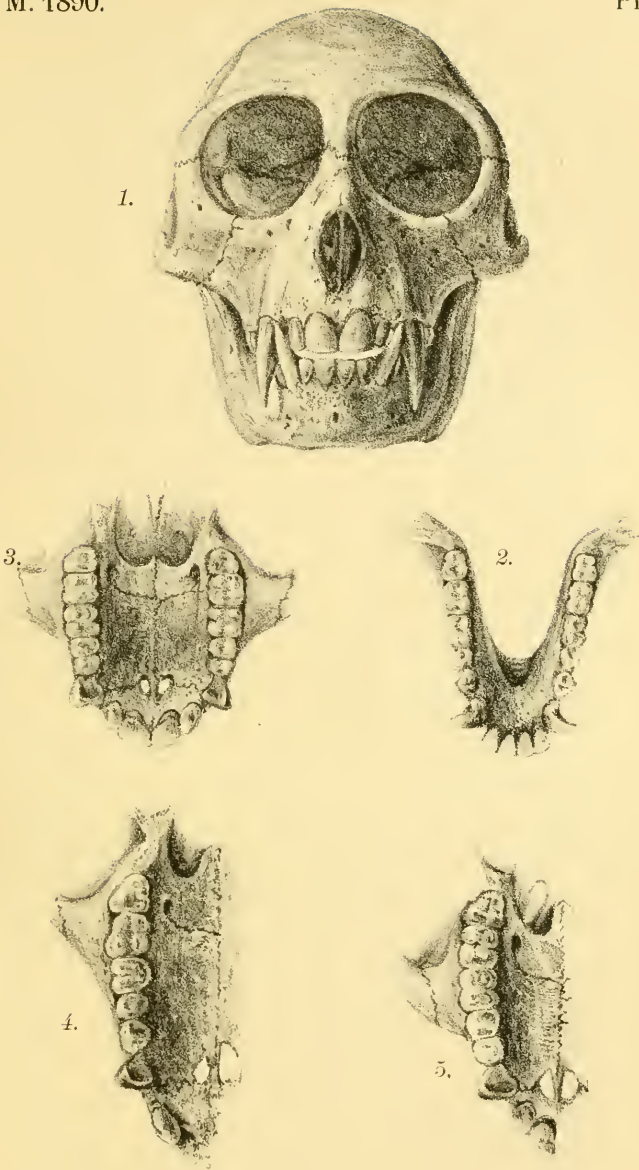
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K. Kaar ad nat. del et lith.

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Hypsiglena Hageni v. *L. d. f.*



C. W. H. Verster ad nat. del. et. lith.

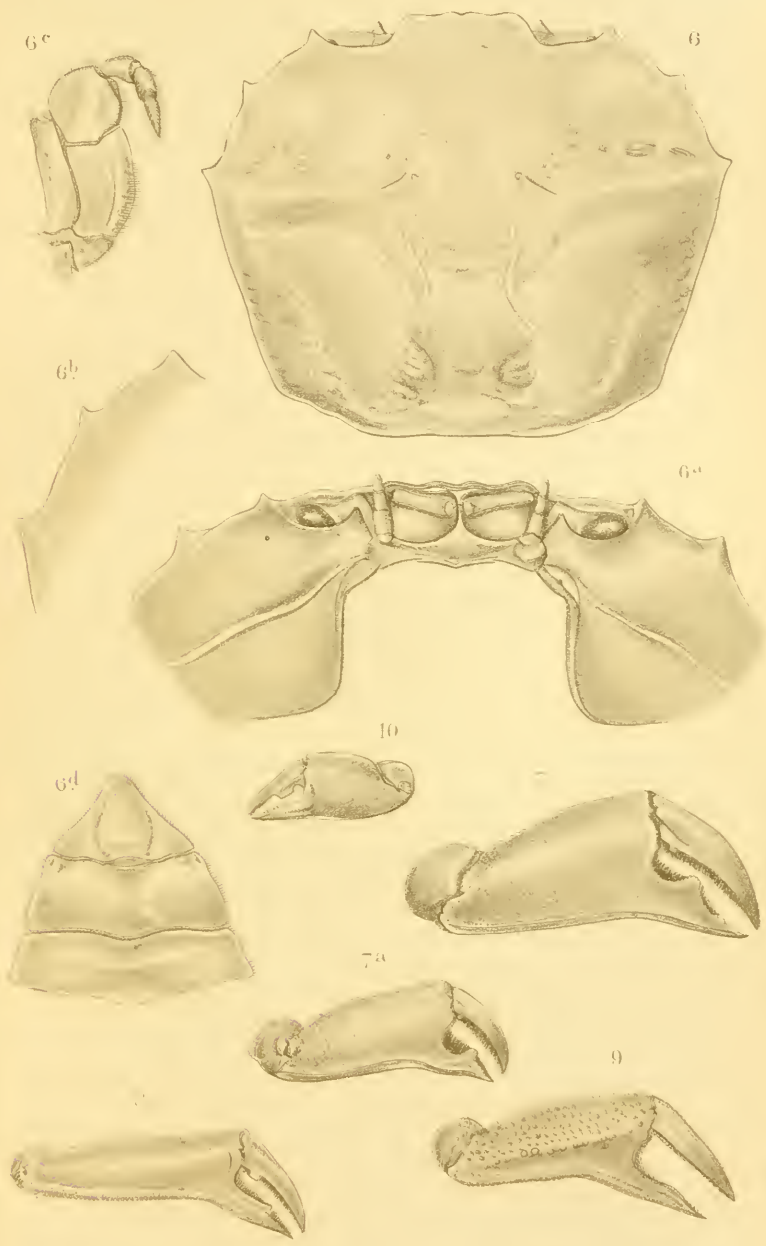
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1, 2, 3. *Cercopithecus talapoin* *Erxleben.*
4. ,, *mona* *Erxleben.*
5. ,, *büttikoferi* *Jentink.*



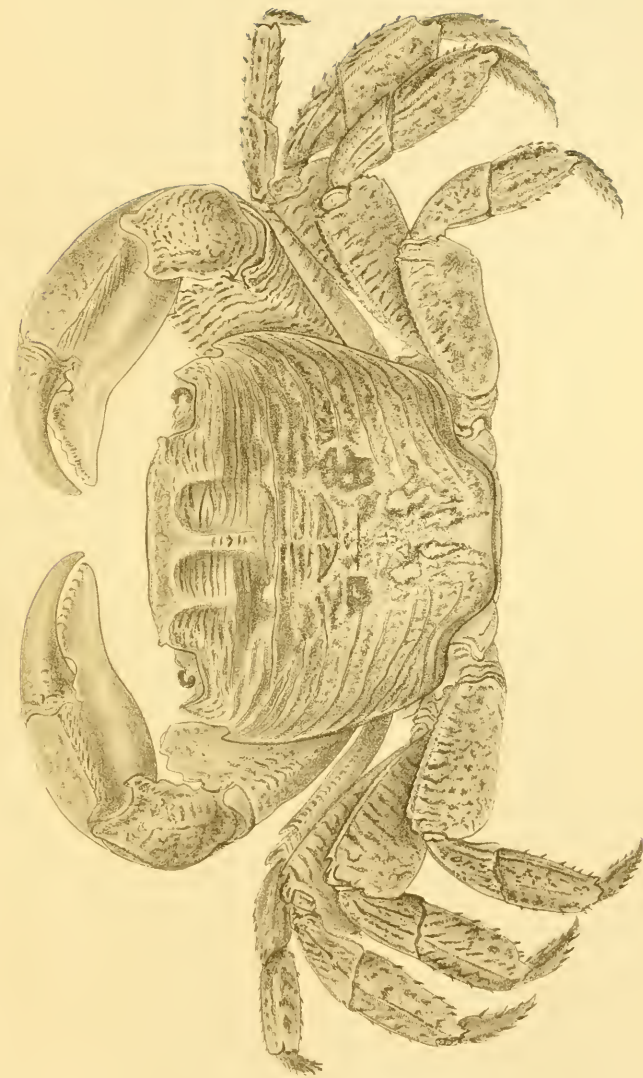
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1. *Xantho punctatus* H. M. Edw. 3. *Pilumnus globosus* Dana.
2. *Heteropanope serratifrons* Kinahan. 4. " *tahitensis* de Man.
5. *Xenophthalmodes Moebii* Richters.



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6. *Geryon trispinosus* *Herbst*. 8. *Macrophth. carinimanus* *Latr.*
7. *Macrophthalmus crassipes* *H. M. Edw.* 9. „ *dilatatus* *de Haan*.
10. *Macrophthalmus pacificus* *Dana*.

11

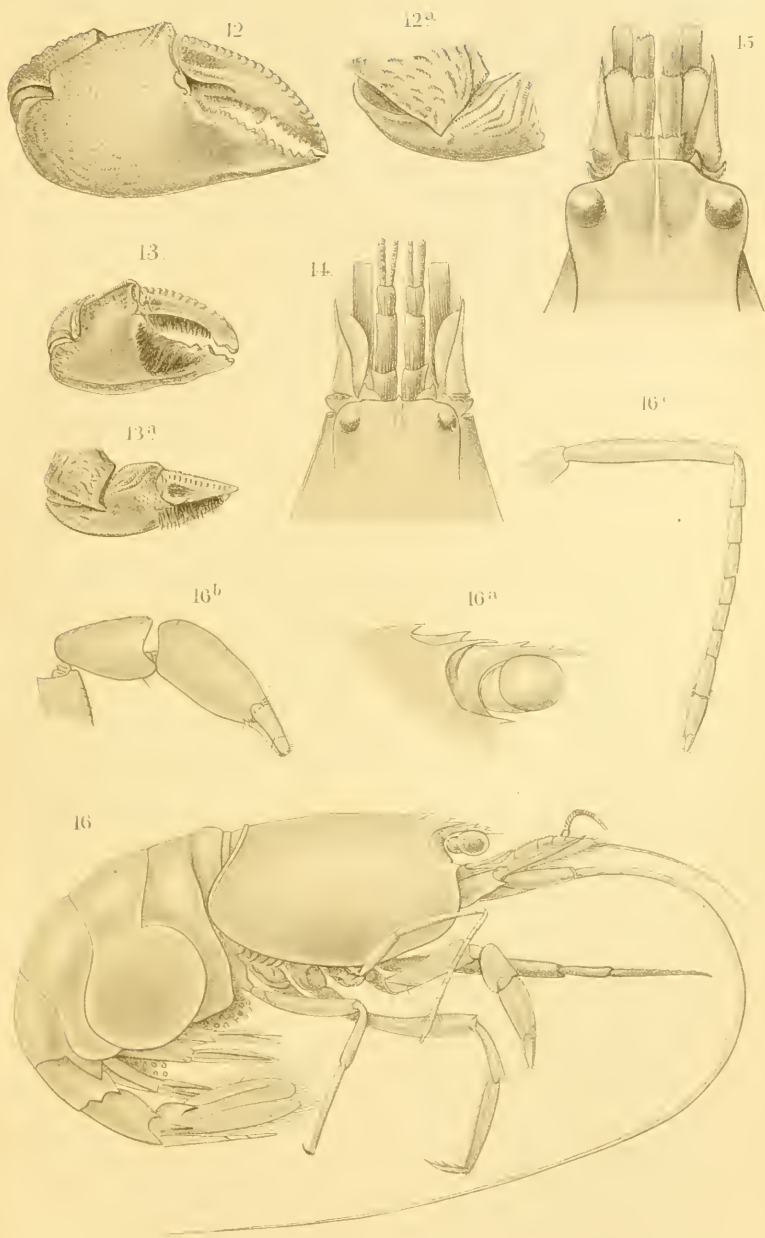


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11. *Pachygrapsus crassipes* *Randall.*

P. W. M. Trap impr.



Dr. J. G. de Man del.

A. J. J. Wendel lith.

P. W. M. Trap impr.

12. *Sesarma bataviana* de Man. 14. *Alpheus pachychirus* Stimpson.
 13. „ *barbimana* de Man. 15. „ *latifrons* A. M. Edw.
 16. *Hetairocaris orientalis* de Man.



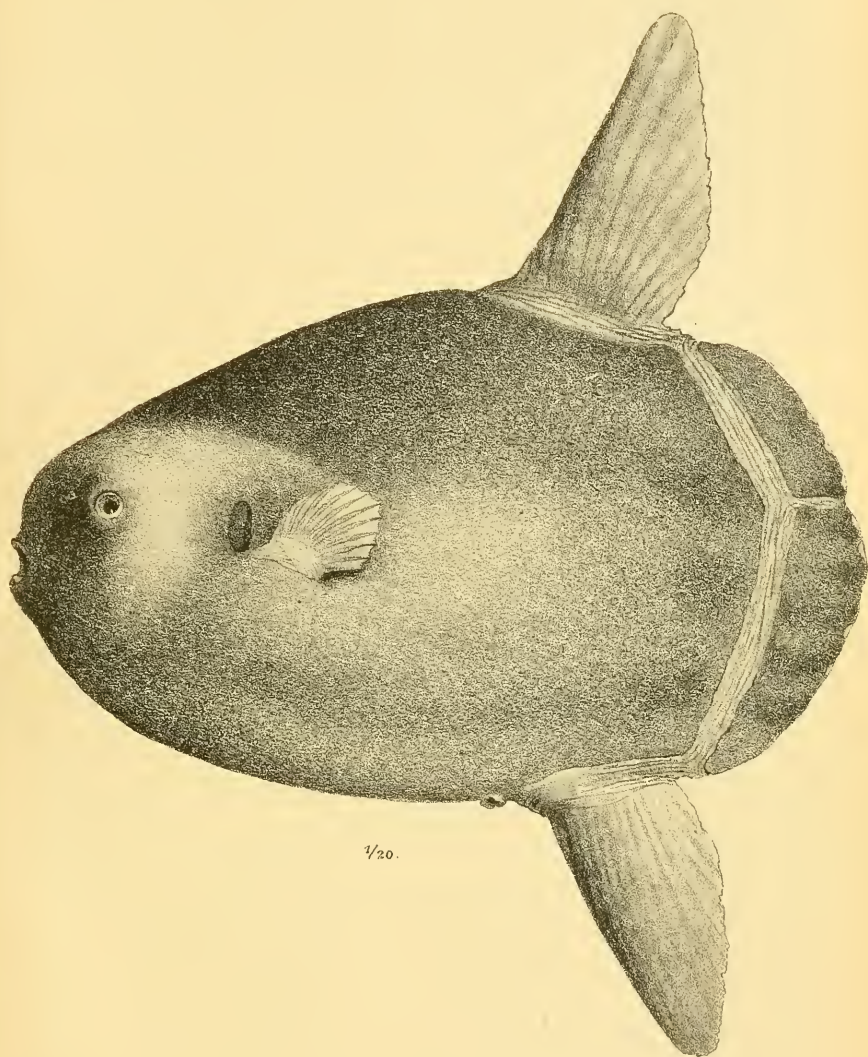
R. Raar ad nat. del. et lith.

P. W. M. Trap impr.

1, 2. *Eupetaurus cinereus* O. Thomas.
3, 4. *Sciuropterus pearsonii* Gray.

5, 6. *Sciuropterus setosus* Temminck.
7, 8. *Sciuropterus platyrus* Jentink.
9, 10. *Sciuropterus sagitta* Linné.

11, 12. *Sciuropterus aurantiacus* Wagner.
13, 14. *Sciuropterus vordermanni* Jentink.

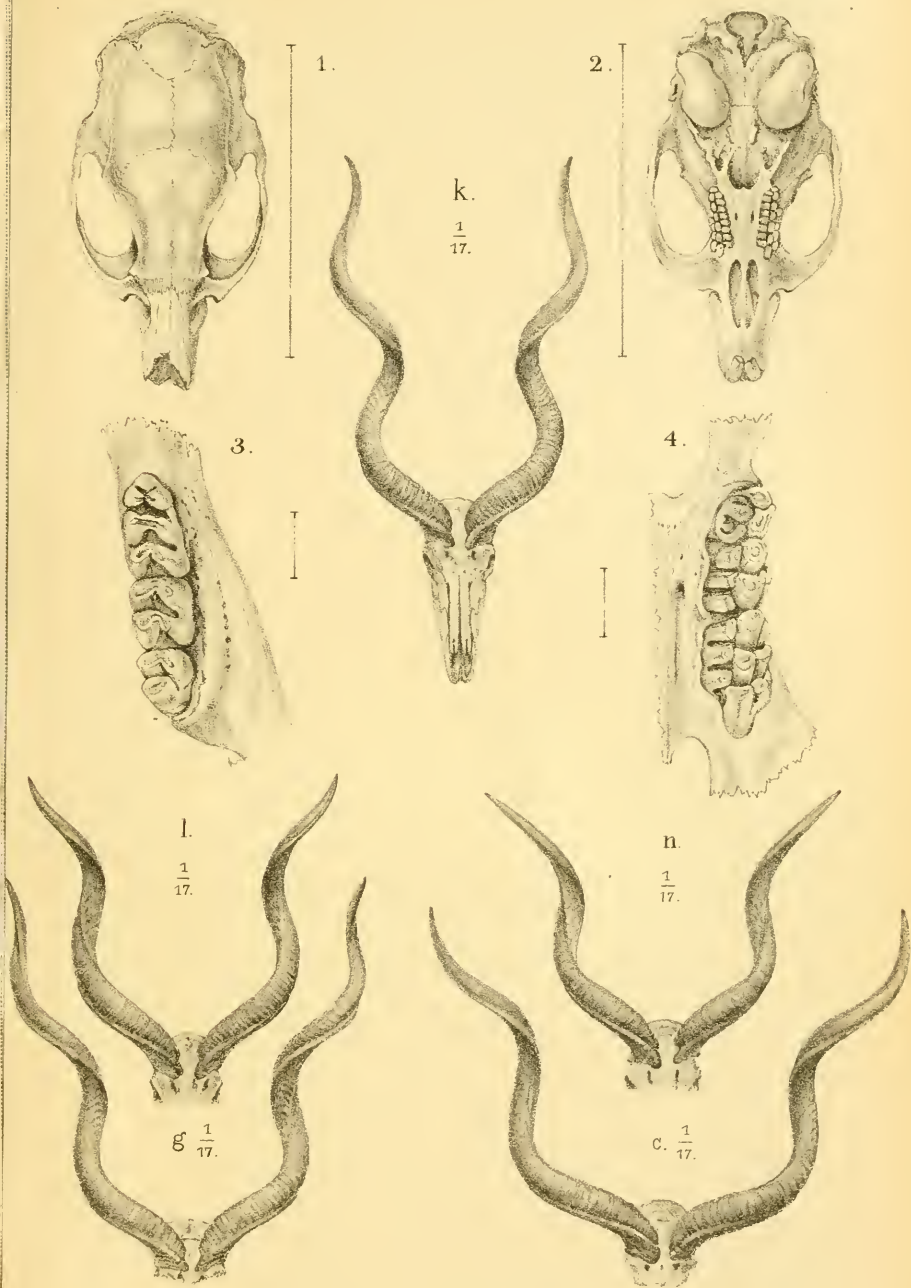


$\frac{1}{20}$.

R. Raar ad nat. del. et lith.

P. W. M. Trap impr.

Orthragoriscus mola (?) *Linné*.



1, 2 3, 4. Dr. H. W. de Graaf ad nat. del.

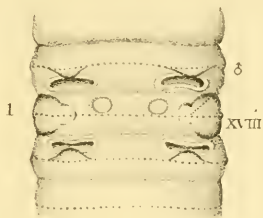
c, g, k, l, n. A. Koorenhoff phot.

A. J. J. Wendel lith.

P. W. M. Trap impr.

1, 2, 3, 4. *Pithechir melanurus* S. Müller.

c, g, k, l, n. *Strepsiceros strepsiceros* Pallas.



3.



4.



5.



6.



7.



Dr. R. Horst ad nat. del.

A. J. J. Wendel lith.

P. W. M. Trap impr.

1—3. *Perichaeta vordermanni* Horst.

6. *Perichaeta musica* Horst.

4—5. „ *sluiteri* Horst.

7. „ *annulata* Horst.

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NOTES

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BY

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Director of the Museum.

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E. J. BRILL.

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List of Works published by E. J. BRILL, Leyden.

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